



Inspiring Excellence

BUCC

MAGAZINE

August 2021

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BRAC University
Computer Club
upgrade yourself



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Director

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Editorial Team from Press Release and Publications Department

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Template And Cover Designed by Creative Department

Tanzimul Haque Kunal
Director

Samit Saha
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<https://bracucc.org/>

What is BUCC?

BRAC University Computer Club (BUCC) is the oldest club in BRAC University, founded by Mr. Annajiat Alim Rasel in 2001. The club mainly focuses on the skill development of students in various tech-related sectors. BRAC University student from any department any semester can join BUCC. Usually we recruit members once a semester. At a time when technology is at its zenith, it has become imperative for students regardless of their major, to have at least some knowledge in tech-related affairs. This knowledge not only helps them in their day to day life but also to gain an advantage in the intensely competitive current job sector. For this, BUCC has continued to hold workshops and seminars on various technological and other worth-knowing topics like: problem solving, critical thinking, graphics design, web development, programming, cyber-security and so on. The club also hosts competitive programming competition 'CPC' for programming enthusiasts and 'Valorant Gaming' competition for the gamers of the club which are considered signature events of the club. As BUCC's motto 'Upgrade yourself' goes, the objective of these workshops and events is to make sure students never fall behind on important IT knowledge, and that they always have an 'edge' when they step out in the professional sector.

BUCC also maintains BUCC Academy, a platform for students to come and solve their academic problems, with the help of experienced instructors. The instructors are both senior and alumni members of the club who excel in academia and IT related skills. Scheduled classes also take place to ensure students are never falling behind in any of the courses.

The club has recently introduced a flagship event called 'R@D!X - BUCC Week', which is a week-long competition focussing on various sectors of IT. The event gives the students exposure to different topics and try out their skills in them through competitive contests. BUCC has also included several national level competitions in this week-long event revolving around graphics, photography, and gaming; in which students from different schools, colleges and universities across the country have participated. The whole vision of the event reflects through its motto 'Learning Through Sharing'.

The club is maintained by youthful and passionate Tech enthusiasts, who are always willing to learn and improve themselves. One advisor and two co-advisors (all of whom are faculties in the university) work alongside the executive panel, which comprises of current members of the club. The club has six departments, depending on the different tasks they are assigned: Event Management, Creative, Press Release and Publications, Finance, Communication and Marketing and Human Resources. Networking is a key trait of the club. For the club's strong unity, members can form valuable friendships with each other and learn from each other.

EB Panel 20-21

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Faizun Nahar Faria
Assistant Director

Chief-Editor Opinion:

After a lot of hard work and dedication, BRAC University Computer (BUCC) Club is proud to announce the publication of its first magazine. This magazine has not only been a mission for us to complete, but also a challenge started by our predecessors. Each of the submissions have been spectacular and enjoyable for me to read through. I hope that the person reading this will have the same enjoyment I felt while editing this. This magazine is a start of what I hope will become a tradition in our club, trying to highlight all the creative and informative works of the members of our club.

Each and every person who has worked with us to complete our work is deeply appreciated and we could not have done it without your help. I would specially like to highlight all the work done by the Executives and senior executives of the PR and Creative departments. Also thanks to all the members of BUCC EB panel and Advisors without whom we could not have done our work so easily.

Md.Abrar Ur Rahman
Assistant Director, Press Release and Publication,
BRAC University Computer Club (BUCC)

Faculty Opinions



Annajat Alim Rasel, Advisor

As a Faculty Advisor to one of the oldest and most essential clubs of Brac University, it is my duty to guide and advise my students and help them to achieve their goals. I always try to support the club members and help them in overcoming the challenges. Even though a large number of members are from the Computer Science Department, BUCC's strength is its members from almost all of the departments of Brac University. BUCC plays a major role for the tech enthusiasts and alike to be part of a club regarding their common interests. The key strengths of the club definitely goes to its ever expanding range of events related to tech each semester. Different events including competitive programming, analytical skill comprehension, graphics design and also gaming have been arranged and completed successfully by the BUCC members. By organizing these events together the students can gain skills such as teamwork, leadership, time management, communication and also how to arrange funding for events. The club grows along with its members to bridge the digital divide, to increase IT awareness, to improve skills, and to become global citizens of the digital world. Extracurricular activities help the students to take a break from their studies and give them a much needed rest. These help students to develop their skills. Besides having good grades it is necessary for students to have the skills. Only by studying one cannot achieve the skills. In the current competitive job market of Bangladesh or the globe, it is an absolute necessity to be skillful. The motivation of BUCC is to create a bridge between industrial IT professionals and students which is why BUCC is focused on improving a students IT skills through various workshops, events and contests. The motto of BUCC is "Upgrade Yourself" . So all the members here get ample opportunity to sharpen up their individual and team skills, learn communication skills, and build up their social network.



Arif Shakil, Co-Advisor

Since Spring 2014, this has been one of the most active and organized clubs that I have ever seen. I've never been directly involved with the club in my student life, but have always been to the events or at least saw their activities up close due to my friends being in the club. This became more apparent when I finally became the Co-Advisor of the club. The club members, the executives are very active and punctual in terms of completing a task within a given timeline. There's almost no delay unless there's an issue that's holding them up. Club should be a place to have fun. Forget who you are and enjoy with everyone. The club hosts a lot of workshops and are closely connected in dealing with a lot of people, both inside and outside of Brac University. Being part of a club and administering in student life greatly enhances in communication skills that helps greatly in their professional life. Furthermore, time management is another crucial factor that just naturally builds up when clubbing.

BUCC is one of the finest organized clubs of Brac University. The atmosphere of this club is just like a joint family. During the pandemic, they never stopped. They arranged a lot of workshops and webinars which complete a students' learning experience. Club members are really pro active and well mannered. I will advise all the members to never stop learning. Every learning has a value and we shouldn't miss any opportunity to enhance our knowledge! Already the club members are doing their best. I hope the club will be able to arrange some national events along with the internal events in the near future. BUCC stands out in Brac University for the single or collaborative events they arrange. Not only arranging events they are also giving online tutors to help the 1st and 2nd year students called BUCC academy which is really an appreciative initiative and also different from any other clubs of Bracu.



Shaily Roy, Co-Advisor



Sadman Amin, Lecturer

BRAC University Computer Club, known as BUCC, is one of the oldest clubs of BRACU that has been inspiring our students in a technological and extracurricular manner. It has become a hub of networking between the current students and the alumnus who have maintained a positive exchange of communication between them. If I had anything to say to the current and future members of the club, I would tell them to try to make their own ground through learning new things and become an example that students look up to. While promoting the members, BUCC should not just look for managerial contribution. It is a good idea to promote people to senior positions who have an exemplary academic background and extracurricular activities. In conclusion, as a former member of the programming contest community, I hope BUCC will encourage more active participation in problem-solving, a skill that serves as a catalyst to any other skills one acquires during the process of their undergraduate life. My wishes are with BUCC and it's an honor to be a part of this Magazine.

Alumni Response



Raiyan Kabir
Panel-16

Hi, this is Raiyan Kabir. I was the Director of Press Release and Publications at BUCC. I would first share my memories belong to the day before orientation. We used to work together the whole day. It was fun and the best place to get to know each other. After the hectic day, we used to have a small party among us. Most importantly, the important skills I learned in the club are communication, public speaking, negotiations etc. I guess these are some great skills to have in this century for any kind of job and I am grateful to BUCC for this. Sadly, the transformation is so drastic. From offline clubbing to online, a lot of great ways of memory-making are not available right now. Actually, the club is home to many of us. We take a lot of things from the club such as skills and network. I think it is our responsibility to give something in return. Loyalty is a great thing we can give back.

I am Shahan Jamil, was an Assistant Director of Press Release and Publications department of the BRAC University Computer Club (BUCC), Panel-16. I joined BUCC in Fall 2016 which was my 3rd semester in Event Management and in Summer 17 I moved to PR and continued till Summer 19. In these 3 years, I enjoyed a great time here. I got opportunity to chill with seniors, batchmates and juniors. My most fond moments include the day before orientation, muri party, having tea at bot tola after GBM and the day of orientation. I am thankful to my club mates particularly Monamy Islam apu and Mahmudul Islam Sanchoy bhaiya for always supporting me with their advice. As an engineering student, I learned technical stuffs from university courses and various online sources. Apart from that, BUCC helped me to learn some extra skills for example pressure handling, group work, appearing formally with new people and so on. In my recent workplace, I am handling issues perfectly which I learnt from BUCC. BUCC is doing excellent work following its tag line "Upgrade Yourself". In this pandemic, while everyone is sitting idle in home, BUCC has arranged various online events, online workshops, programming contests to keep the members super active and engaged in learning. The decision makers must deserve an appreciation for this. "BUCC Week" is such a wonderful idea among these. I hope the future Governing Body and Director Body will also work like this and come up with new and innovative ideas for the betterment of our members. Always hear your heart, think positively and try to achieve your goal. You may fail, but your effort should be 100%.



Shahan Jamil
Panel-16



Tiash Roy
Panel-17

Hi, I am Tiash Roy and I was the Director of Press Release and Publications of BUCC. If anyone asks me to share my memories in BUCC, I would first share orientation preparation we used to do before the orientation day. Then, adda with seniors and juniors in the afternoon. Being as a member in BUCC, I could learn time and task management. Also, club activities taught me how to maintain balance between work life and personal life. The club has evolved into so much more since I joined. It's not just a platform for leisure activities but it is working for the skill development of the members now.

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Why educational institutions of Bangladesh should emphasize more on programming skills of the students

Shadab Iqbal

Department: Human Resources

First of all, let us get a brief idea about what programming is. Computer is an incredibly powerful but foolish device. One machine can do the work of 5 ordinary people, but 5 instruments cannot do the work of an extraordinary human being (Hubbard, Elbert). By learning programming, each of us can become the person who can give computer orders as he/she wishes. Whatever you command to the computer, the computer will execute it without any objection. This is known as programming in simple words. Maybe the computer does that right now, if I tell it to play music, it starts playing music for us. But the actual fact is that a programmer has already told the computer that if you want to listen to the music, it will have to start playing music. If he wanted, he could have programmed it in such a way that whenever you would command the computer to play music, it would suggest you to sit for study instead of playing music. The programmer is the one



whose words make up the computer. It's interesting, isn't?

A computer is a stupid machine with the ability to do incredibly smart things, while computer programmers are smart people with the ability to do incredibly stupid things. They are, in short, a perfect match. - Bill Bryson.

What does a student of school or college do with a computer or mobile? Many children in Russia-China write code in assembly, but even without doing a survey, it can be said that most of the children in our country do not do much except watching movies, scrolling in Facebook, playing games etc. In fact, many have no idea what to do with a computer. But if a boy or girl is taught programming, their world will change. If you know programming, you can understand that a computer is not just an entertainment device, but the computer was created using its capabilities to do big research, to calculate. Even if you do not research on a computer, you can at least learn to use this ability to do much more productive things with your skills and abilities. Programming learning is not limited to just computers, most good programmers have very good mathematical and logical knowledge. Like chess, programming is a game of logic, the logical sector of the brain is developed by thinking about what task to do next after a task, how to do it, and how to get faster results. In my opinion, mental cognition by thinking critically is second to no other tasks. Especially when you learn programming at an early age, whatever

benefits you get from developing your thinking ability will be useful throughout your life, even if you give up programming later, your ability to think will remain. Is programming just for students of Computer Science? No, there is no logic in it, no matter what you are reading or wanting to read, you can learn programming for pleasure and use it for your benefit. No matter what you study in science, your research will require a computer at every moment. Even if you study Business or Arts, your knowledge of programming will come handy sooner or later.

A good programmer is someone who looks both ways before crossing a one-way street.
– Doug Linder, systems administrator

But, despite being sad to say, our country still lacks a lot behind when it comes to programming skills of students. Though our country does have a subject called ICT in intermediate and school level, it's only nominal. Teachers teach these subjects like a machine and thus most of the students can't find the fun in programming resulting in zero learning. From my experience, when I was in college, our ICT teacher used to make us memorize codes which is completely absurd. Programming language is not a Biology chapter. It is futile to just cram codes without understanding what's happening for what. But, this situation is changing. Now-a-days, our Universities are focusing more on programming skills. Different programming contests are being arranged in universities across the country. I would like to suggest every student to attend these contests once in a while because it will be very helpful later in your life, regardless of what career you choose. My own institution, BRAC University, is also bringing a change in this framework. BRACU is now providing mentors to train the students who are interested in learning programming. BRACU has also opened an elective course just for developing competitive skills in programming.

My dream is to create a culture in our country who knows how to think. People should not be concerned about each other's personal matters, but rather concerned with mathematical problems, puzzles, algorithms. Children will not use their talent to play video games only, rather use that talent in the development of the country and the world. In addition to reading books, practicing math, programming learning can play a huge role in starting this culture. I think learning programming in today's age is just as important as learning anything else, because we need computers in all our work. So when you watch kids playing games around you, inform them about programming, encourage them. Of course, it doesn't make sense to teach forcefully. Whoever likes it, will learn. But everyone should at least know what programming is, or else how will they be encouraged? Many people do not know before coming to university there is something called programming. And if you know programming, help others learn as well, thus a change is certain to come sooner or later. Everyone in our country will learn to think. Thus a culture where people think with logic will be created.

"Everybody in this country should learn to program a computer, because it teaches you how to think" - Steve Jobs

I am concluding my writing with two of my favourite quotes:

"Craftsman-ship has its quiet rewards, the satisfaction that comes from building a useful object and making it work. Excitement arrives with the flash of insight that cracks a previously intractable problem. The spiritual quest for elegance can turn the hacker into an artist. There are pleasures in parsimony, in squeezing the last drop of performance out of clever algorithms and tight coding." - Steven Skiena & Miguel Reville.

"What's the world's greatest lie?" the boy asked, completely surprised. "It's this: that at a certain point in our lives, we lose control of what's happening to us, and our lives become controlled by fate. That's the world's greatest lie."- The alchemist, Paulo Coelho.

J.A.R.V.I.S

Ahnaf Rahman Khan

Department: Event Management

People might have questions what is this JARVIS. Is it an app or any new invention? Well here is the answer, most of us have watched the movie called "IRON MAN". A genius named "tony stark" who invent a suit to save the world. But have we noticed that the thing tony stark used to command isn't the suit actually, it's his artificial intelligence. This artificial intelligence named Jarvis (Just A Rather Very Intelligent System) made his life so easier. Just think if we actually have this kind of artificial intelligence in our life, how much our work pressure will be eased. Now-a-days people are so busy at their work that they cannot even get time to spend with their family. This creates a distance between the family members. Just imagine for a while- you are living in a house which has an AI like Jarvis, how will your morning can start? Well, you don't have to do any-



thing by your own, just order the AI. From putting on your cloths to putting off is can do anything. Moreover it can surf multiple virtual pathways according to domain of knowledge and related taxonomies, according to relatedness of time, space or narrative clues, and according to conversational requirements, and often according to all three at once. Isn't it interesting? Many scientists and engineers are taking initiative but we are still far away for this kind of technologies like JARVIS. If you are thinking that it's just an AI how far will it go? Then I think you have to change your mind because it's beyond than just an AI. This thing is just like a human who doesn't have a physical appearance. Even it can do stuffs that a human cannot do. Moreover, to access this AI you don't have to stay at your home you can access it from anywhere of this world. So, in my point of view this type of technologies would is very much necessary in this busy word. What do you think?

Digital Technology

Jannatul Ferdous

Department: Press Release and Publications

Digital technology has transformed nearly every aspect of modern life, bringing with it many advantages. It means that devices can be more compact, faster, lighter, and more versatile. Huge amounts of information can be stored locally or remotely and moved around virtually instantaneously. Travel, work, shopping, entertainment, and communications are just some of the areas that have been revolutionized in recent decades.

First and foremost, digital technologies are reshaping the way education is practised, raising many questions:

How can we better prepare teachers for the challenges of high-tech classrooms? How can educators tap into the vast resources of the Internet to enhance curriculum?



curriculum? Process of making technological tools and services, such as computer systems and the Internet, a part of the educational environment -- includes changes made to the curriculum as well as to educational facilities. Among digital technology, digital learning is changing the way of education. Lessons and courses are delivered virtually online so that you can now easily communicate with most of the world's population and learn directly from sources. For example, if you are trying to understand foreign events, or learning a new language. Along with, digital technology can also be easier to use for people with disabilities and often give them equal access.

Moreover, new digital technologies have transformed the nature of uncertainty inherent in entrepreneurial processes and outcomes as well as the ways of dealing with such uncertainty. This has raised important questions at the intersection of digital technologies and entrepreneurship—on digital entrepreneurship. It advances a research agenda that calls for the explicit theorizing of concepts related to digital technologies. For example, startups of business can begin online and eventually migrate to a physical environment if the entrepreneur feels the need. Here at BRAC University, authorities are organizing many events regarding this to come up with their new ideas or solutions for recent problems. It required to develop a variety of products, such as software, applications, and services which will depend a lot on the type of problem-solving and the consumer profile to reach.

In addition, digitalization has led to a revolution in financial matters. Online banking is done either through a laptop, tablet, or phone app is now the norm. For instance, Bank users can now check their incoming and outgoing payments remotely, as well as arrange money transfers and bill payments. Outside of banking, other financial matters, such as buying and selling currency and shares can be dealt with online. Transferring money between accounts both nationally and internationally has also seen a great deal of innovation in recent years.

Furthermore, digital technology is giving opportunities for working from home, as remote working becomes increasingly common. Many jobs can now be done from hundreds, or even thousands of miles away without difficulty. Without the need for all workers to be present in the same building, many other flexible working practices are now possible. As a result, the nature of work has been transformed by digital technology.

Apart from this, digital technology is increasingly making machines smarter. In some cases, the machines no longer need humans to operate them, freeing up workers from often boring tasks for more interesting pursuits. In other cases, smarter machines mean better standards of safety or a better experience for the user. Products and services drop in price as the technology develops and becomes more common. Many tasks can now be done directly by customers, rather than having to be done through another person acting as an intermediary, for instance, booking a holiday.

Last but not least, digital technology has many benefits and advantages which has made our lifestyle easier and modern. It has made social connectivity, communication speeds, GPS and mapping easier. To quote Richard Stallman, American free software movement activist and programmer, says, " Sharing is good and with digital technology, sharing is easy."

Therefore, this is what an important topic in technology which needs to be learned.

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Bangladeshi Women and Programming

Rowhsanara Sadia

Department: Human Resources

For long, women were being left out of the conversation when it comes to programming. However, a large number of women are increasingly proving that even in the world of bits and bytes, successful programming can very well happen by women. People think that programming is not for Bangladeshi women. But, they are wrong. Let's know about some Bangladeshi female programmers-

Shaheda Mustafiz

Shaheda Mustafiz is a Bangladeshi programmer who is the first female programmer of Bangladesh. Shaheda Mustafiz was a student of Economics. After finishing her studies in Economics she had received training on Software Architecture in NCR Corporation of the United States. She has also worked as the Canada's 20-20 Technologies Incorporated's Executive Director of Bangladesh branch and the United States's E-Techlogics Incorporated's Executive Vice President of Bangladesh branch. Besides, She is running Computer Training Institute for the women and children and working as an Advisor of her next generation's software firm.



Sadia Nahreen

Sadia Nahreen is the first woman who got a chance to join the world's leading search engine, Google, directly in undergraduate level. She was born in Cox's bazar, district in Bangladesh. And she brought up in Dhaka. She completed her secondary (SSC) and higher secondary (HSC) from Holycross Girls high school. She had admitted to Bangladesh University of Engineering and Technology (BUET) in Computer Science in 2009 and joined in the Headquarter of Google in Mountain View, California, United States in 2015. She had also joined in Codeforces, a website of programming competition as a third Bangladeshi Red coder (Grand Master).



Programming is now universally accepted in the world market as a method of solving problems rather than traditional practice. Now the demand for manpower is increasing that can represent Bangladesh in the programming world. But in the field of programming in Bangladesh the presence of men is noticed, but the number of women programmers is relatively small. So, Bangladesh young women should come forward in the field and prove themselves .

Raptor-Inspired Drone With Morphing Wing and Tail for Unprecedented Flight Agility

Nafim Ahmed Bin Mohammad Noor

Department: Press Release and Publications

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed diam nonummy nibh. For the last decades, we have seen a lot of drones and, unexpectedly, they were mind-blowing and very successful in this commercial world. However, drones such as 'Multi-Rotor Drone' have poor agility and are also incapable of flying in rough weather. Therefore, I present to you 'The Raptor-Inspired Drone' that was designed with the inspiration from The Northern Goshawk, a fast, powerful raptor that flies effortlessly through forests. This is a drone developed by the scientifics of the Laboratory of Intelligent Systems of EPFL led by Dario Floreano. They carefully observed the shape of the bird's wings and tail and studied its flight behaviour to develop a similar characteristic drone.

"Goshawks move their wings and tails in tandem to carry out the desired motion, whether it is rapid changes of direction when hunting in forests, fast flight when chasing prey in the open terrain, or when efficiently gliding to save energy," says Enrico Ajanic, the first author and PhD student in Floreano's lab. And Floreano adds "Our design extracts principles of avian agile flight to create a drone that can approximate the flight performance of raptors, but also tests the biological hypothesis that a morphing tail plays an important role in achieving faster turns, decelerations, and even slow flight."



A drone that moves its wings and tail

Back in 2016, the Engineers already have designed a Bird-inspired drone with morphing wings. This is a step forward as the new model can adjust the shape of its wing and tail, thanks to its artificial wings. "It was fairly complicated to design and build these mechanisms, but we were able to improve the wing so that it behaves more like that of a goshawk," says Ajanic. "Now that the drone includes a feathered tail that morphs in synergy with the wing, it delivers unparalleled agility." The drone has the capability of changing the shape of its wing and tail to alter its direction faster, fly slower while landing and reduce air resistance when flying fast. Moreover, it uses a propeller for forward thrust because of its efficiency and makes new wings and tail applicable to other winged drones and airplanes.

The advantage of winged drones over quadrotor designs is that they have a longer flight time for the same weight. However, quadrotors tend to have greater dexterity, as they can hover in place and make sharp turns. "The drone we just developed is somewhere in the middle. It can fly for a long time yet is almost as agile as quadrotors," says Floreano. This combination of features is especially useful for flying in forests or in cities between buildings.

Opportunities for artificial intelligence

Flying this new type of drone isn't easy, due to the large number of wing and tail configurations possible. To take full advantage of the drone's flight capabilities, Floreano's team plans to incorporate artificial intelligence into the drone's flight system so that it can fly semi-automatically.



Reference:

"Bioinspired wing and tail morphing extends drone flight capabilities" by Enrico Ajanic, Mir Feroskhan, Stefano Mintchev, Flavio Noca and Dario Floreano, 28 October 2020, Science Robotics.

PROCRASTINATING

Emon Hossen

Department: Event Management

This is a wonderful time to live. There have never been more possibilities and opportunities for you to achieve more of your goals than exist today. There is never enough time to do everything you have to do. You are literally swamped with work and personal responsibilities, projects, stacks, magazines to read, and piles of books you intend to get to one of these days as soon as you get caught up. But the fact is that you are never going to get caught up. You will never get on top of your task. You will never be able to read all those books or leisure time activities that you dream of. You will never be able to solve your time management.

There will be some lacking of your works it doesn't matter how many personal productivity techniques you master. So, the key to success is action. These principals work to bring about fast, predictable improvements in performance and results. The faster you learn and apply these, the faster you will move ahead in your career.



In our student's life we all have deadlines but what we do is we can't make it on time we waste our time by saying that we have more time to do, so at the last moment we get the fumble. So, don't waste the time do your works now and spend your variable time doing some self-improving, in this time self-improvement is very necessary. One of the keys to your living a wonderful life, having a successful career, and feeling terrific about yourself is for you to develop the habit of starting and finishing important jobs. At that point, this behavior will take on a power of its own and you will find it easier to complete important tasks than not to complete them.

You need some key qualities to develop the habits of focus and concentration, which are all learnable. They are decision, discipline, and determination. First, make a decision to develop the habit of task completion. Second, discipline yourself to practice the principles you are about to learn over and over until you master them and finally back everything you do with determination until the habit is locked in and becomes a permanent part of your personality .So, begin today to plan every day, week, and month in advance. Take a notepad and list all everything you have to do for the next day, layout of your major goals, projects or tasks by priority, what is important, and by sequence what has to be done first, what comes second and so on. Always work from a list, you will be amazed at how much more productive you become and how much easier to stop procrastinating.

Tech Invasion: A Glance at it's Advancement

Shihab Sharar

Department: Press Release and Publications

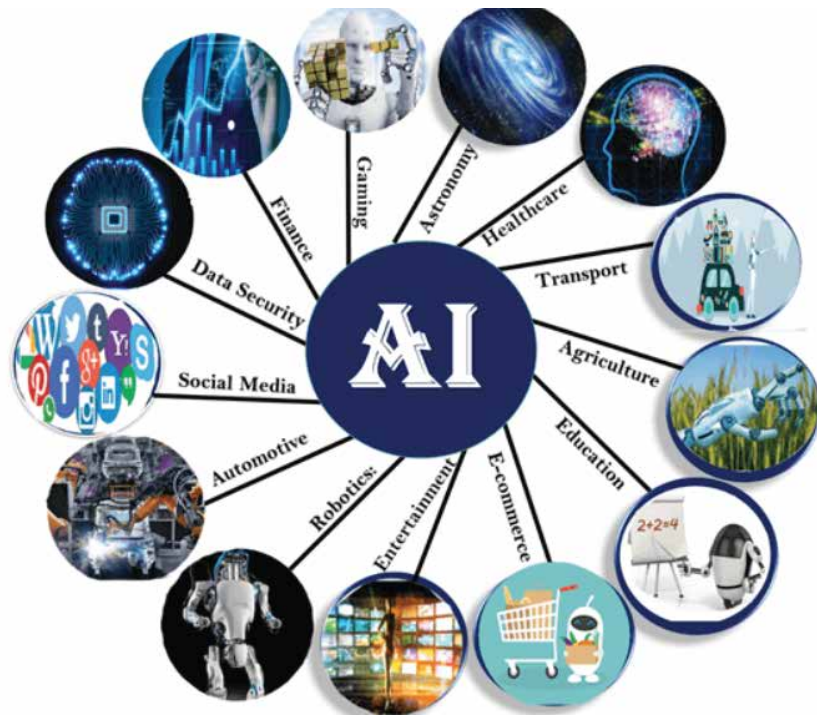
What some people might term the present digital age as 'Tech revolution', the truth is not far from as it seems. If we were to look carefully at the daily activities that constitute our lives, artificial intelligence (Ai) has become more or less a necessary aspect.

Considering us students, here at BRAC University, latest news on academics and events are uploaded and updated by our faculties (and othes concerned) on our very own website, app and of course, google groups and forums. As a matter of fact, Vanderbilt University faculty members are "using technology to enhance their student's



learning". Students are motivated to engage n discussions related to education which helps them all the way from elementary and school to college graduation. Agreed, some might not be comfortable with the technology, but to embrace this rapid change, courses are being taught at computer labs, multi-media classrooms are designed for various purposes such as presentations, short educative videos etc. Yes, technology or more accurately, AI, can make communication, learning and seeking knowledge for students better, efficient and reliable. However, what impact does it have when a student puts down his/her mortarboard (grduation hat) and faces the real world?

The world that should be used to describe the usefulness of AI in ironically, the age of AI is limitless. Global giants Unilever and Goldman Stachs use the company Hirevue, who "offers software that screens job candidates using algorithms and artificial intelligence (AI)." On the other hand, bussiness must adopt digital transformations with the help of internal and external experts, according to Forbes. For example, Blockbuster filed for bankruptcy in 2010 for ignoring and hence not adapting to alteration of a customer's viewing habits and market disruptions; where as Netflix today i a \$100 bbillion-dollar company. Moreover, in infrastructure, The Economist wrote "drone cameras" could easily provide regular readings, laser scanners are equipped to pick up fine details anddisplay them as a three-dimensional image etc. Yes, this would completely remove any need for human labour in the upcoing days. But who can be sure?



Regimes should exist to precisely monitor and maintain such measures to prevent any unprecedented incidents, The Economist added. Furthermore, the construction of new structures with the help of “advances in engineering” involve AI. And who will be the ones to oversee the successful implementation of AI in these fields? Why, humans themselves! Beside, Mr. Zia Chisti, a computer scientist who has built two multi-billion dollar businesses, the latest based on AI is skeptical about AI “disrupting every industry on earth at breakneckspeed.” During his interview with BBC, he claims that the principles used 40 years ago were unchanged, but machine learning has progressed impressively. However, the progress is not enough to “surpass humans and make them redundant.” To counter this statement, it was mentioned DeepMind Gused AI to automate the diagnosis of eye patients, which can potentially bring about rapid treatment to numerous patients.

To quote Ms Kriti Sharma, an AI technologist at Sage, “We’re too fixated on creating AI that is as good as humans - in reality, we need something that can support and make human lives better.” And that is what we need to learn, knowing enough is never going to produce results, rather, how we use the knowledge for our greater good.

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Just Gaze and Play!

Afra Anjum Shayari

Department: Press Release and Publications

"The technology you use impresses no one. The experience you create with it is everything." - Sean Gerety. Have you ever thought you could play a game entirely with your eyes? Technology has really made its way to transcend its boundaries to build facilities that are accessible to everyone and undeniably a joy to experience. Organizations and even companies like Microsoft have been known to make gaming a lot easier for disabled children. One such non-profit organization, UK, Special Effect, previously developed the application 'EyeMine2'—the latest version of EyeMine launched in 2018—which allows the disabled community to play the incredibly popular open-world game, Minecraft, just with their eyes! The game can be played by anyone: students, children, and gamers with special needs. And it is absolutely free for all! Paired with Windows and Minecraft: Java Edition, and an eye tracker of any kind, EyeMine2 brings about an intuitive experience for gamers that is no less fun than playing with their hands.



EyeMine2 offers better weapon handling, more accurate building, better climbing control, and adjustable moving speeds compared to its older version. Minecraft lovers can now build their world in the Minecraft universe faster than ever with these added features. The updated release, EyeMine2, basically came about as a result of player feedback. However, making EyeMine more accessible and easier to use became Special Effects' most extensive project with a host of unique features and more setting options. The new version includes adjustable keyboards allowing gamers to change their own settings for specific movements like walking speed and mouse sensitivity.

Additionally, improvements have also been made in combat to make bows and arrows more efficient. A new mode, dubbed as the 'Iron Sights' has been introduced that helps players zoom in for more precision as they build. There are default settings especially made for beginners to better adjust with the game, while a saved toolbar makes it easier for players of all levels to access their favorite and most-used Minecraft items quickly. Alongside these latest features, one of the most significant changes in the newest EyeMine version is the new dwell building functionality that lets players choose where to place blocks just by looking at a spot directly in the world of Minecraft to accelerate the building process. Becky Tyler, a passionate EyeMine gamer, tells the project team leader

that it took her just three hours to build a pet emporium using the new dwell feature while it generally took her two days to build. "I really enjoyed building my pet emporium! It was so much quicker in the updated version of EyeMine, which made the process a lot less repetitive and laborious. I love finding all the animals to put in the shop too, including some fish, which were new in version 1.13 of Minecraft, so I hadn't had access to these before," Becky says.

How it works

Considerable work has been done to make innumerable changes in EyeMine to make sure its latest version (EyeMine2) can be used by a greater audience and fit the needs of various player levels, starting from beginners to more advanced gamers. Its broader spectrum of settings has made the much-loved game accessible with many eye-trackers, including low-cost units like the Tobii 4C. It primarily serves inexperienced players who are new to Eye Gaze technology. The eye-trackers are equipped with built-in infra-red cameras that track where the eyes are looking, thus letting the player easily move the mouse pointer around the screen. Players can either click by dwelling which is staring at a screen for a certain length of time, or using a plugged switch to the computer.



The dwelling in action appears as a red circular timer in the lower screenshot. EyeMine is not limited to eye control, however. Anything that controls the mouse cursor can also be used. For example, a joystick or trackball or a head control mouse.

What you need to play EyeMine V2

You will need a Windows PC running at least Windows 7 with minimum specification to play Minecraft.

You'll also need a Minecraft account. EyeMine software is not compatible with Minecraft on mobiles or gaming consoles.

Any of the eye-trackers mentioned in Special Effect's EyeMine Github page will work. Also, an eye tracker with its own software that allows you to control the mouse will work, too, but with more limited functionality.

There are people with severe physical disabilities and hence struggle with the movements required to play Minecraft. While EyeMine was specifically built for the physically-impaired as the main target audience, it is available for everyone free of charge. So, if you are a die-hard Minecraft fanatic or wish to give it a try, or if you want to help the local disabled game lovers, you can download it from the organization's GitHub page.



		3		7			2	
8				2	6		4	
	7				3	6		
7		4	2				1	
	9		4	5	1	2	7	6
1		2		3				4
		6	7	1			3	5
		7		8	4	9		
4			5			7	8	

The answer for this Sudoku is in page: 76

A CSE student's path

Md Shahriyar Al Mustakim Mitul

Department: Human Resources

As a CSE student you might wonder where your degree and knowledge will lead you. There are a lot of sectors you guys can focus at the same time focusing on your CGPA. Few of those are given below:

1) Competitive Programming:

ICPC (The International Collegiate Programming Contest) is an algorithmic programming contest for college students. Teams of three, representing their university, work to solve the most real-world problems, fostering collaboration, creativity, innovation, and the ability to perform under pressure. Through training and competition, teams challenge each other to raise the bar on the possible. Quite simply, it is the oldest, largest, and most prestigious programming contest in the world.

You have to know a coding language very well and after that learn Data structure and Algorithm, Discrete Mathematics, Number theory and then start contests. Some popular contest sites are "Codeforces", "Codechef" etc

2) Open Source Contribution:

Open source contribution is something you do after you get a job. Maybe you have got it. Okay..no more confusion. Open source contribution is helping other creators or people with your code, writing and design. Anything that has some value, you can contribute that at github. What will you get?? That's a good question. Let's know some contest of open source:

i) GSoc (Google Summer of Code); (Link: <https://summerofcode.withgoogle.com/>)

Google summer of code is held in every summer and there are a lot of softwares like VLC Player, Mozilla firefox where you can contribute for 3 months and Google will pay you 5-6k dollars at that time. You will have a monitor of google team to look after your work and teach you. Obviously you won't get it easily. You have to apply how you will work in this 3 months.

ii) Hacktoberfest: <https://hacktoberfest.digitalocean.com/>

iii) Outreachy : <https://www.outreachy.org/>

3) Blogging:

You can blog what you learn which you can post at linkedIn and will make your linkedIn profile much more active and the recruiter will think you know the thing at a good level.

4) Competition:

There are a lot of places where you can prove your coding knowledge level. Some websites are given below:

Top 4 company's competition:

i) KickStart, HashCode, CodeJam

<https://codingcompetitions.withgoogle.com/>

ii) Microsoft Imagine Cup

<https://imaginecup.microsoft.com/en-us/Events?id=0>

iii) Google Solution Challenge

<https://events.withgoogle.com/dsc-solution-challenge/>

iv) Facebook Hacker Club

<https://www.facebook.com/codingcompetitions/hacker-cup/>

Other places for hackathons:

i) HackerEarth

ii) Dockship

iii) Devfolio

iv) MLH

v) Kaggle

5) Community leadership program of big 4 company:

i) DSC (Developer Student Club): It is a community of Google service and products of each university. You can apply for being a lead. Google will sponsor your events and send you swags. Your CV will get extra push.

ii) Microsoft Learn student ambassador: It is also a community of Microsoft products where Microsoft will provide you swags and sponsor your seminars.

iii) AWS Educate Ambassador: It is not a community programme though. AWS will choose some people and train them freely.

6) Internship:

If you prepare your "data structure and algorithm basics" very well you can apply for an internship. It will give your CV an extra push.

Butonic

Maisha Jerin

Department: Communication & Marketing



“For people without disabilities, technology makes things easier. For people with disabilities technology makes things possible”-[ibm training manual 1991]

Ideas of creating something new in this technological field never failed to make me feel mesmerized. From the very beginning of my teenage years, an enthusiasm

for knowing about the vast technological world works in me. As I grew up, I became more and more enthusiastic about the tech world and a desire of creating something new was growing inside me. After joining the university computer club, finally my passion got a platform for its healthy flourishing. For the first time I got to participate in the intra-university hackathon competition. Challenges never scare me, rather work as an energy to show my best. So now I am going to share my experience of my very first tech project which gives you some new ideas to make some difference in the vast technical field.

The project work we started as a team of five members who worked hard to make the project happen. Our main concern of creating the idea of the application was the Covid pandemic. During the global pandemic for Covid-19, life has changed drastically for everyone. As well as the pandemic has also caused a huge mental impact in the mass people. Students are the main victim of it. In order to minimize this issue, we have decided to launch an app for the sake of the mental health of mass people. The application we have decided to launch is named BuTonic. This application will help as a cure for mental patients of all ages as well as the healthy people can use this app to improve their mental health condition. Healthcare workers are overwhelmed with work schedules and dividing their lives at the same time.

People with pre-existing anxiety, depression or psychosis are affected all over the world. The main motive behind the app is to secure the healthy mental health of mass people which is hampered due to the Covid pandemic. The app will basically have features to communicate with the health consultants and medical psychologists. Mass people can install the app and communicate with these workers in order to solve the problem accordingly. The app also has features for meditation which is for everyone in order to have a

sound mind. As well as, many people have no idea about the psychological unit of BRAC University. So, by using this app people will get to know about this sector.

The main goal is to help the people who are in need of psychiatric treatment. People do not have to go out, take the doctor's appointment, and wait for hours. This application ensures a person sharing his or her problems without taking the extra hassles of waiting for hours in their busy schedule. At the same time, we are giving an opportunity to the freshers or newly passed students to prove their efficiency in this sector by creating great job sector. BuTonic will not only serve people by giving mental support but also save their time. Moreover, this may spread the fame of BRAC University nationally and internationally through the fame of this app.

APPLICATION IDEA:



The app will be used both in IOS and Non-IOS devices, the user will enter the main page where they will find two icons named MEDITATION and HELP. There will be a MENU option in the corner of the main page. Again, there will be options in the menu named 'profile', 'dashboard', 'complain box', 'public'. The list of consultant and medical psychologists and the advising schedule of the consultants will be given in the dashboard. Lastly, in the public option, there will be various criteria to post about their feelings or how they get over from their illness and people can see it along with reacting and commenting. Getting back to the home page, if the user clicks on the meditation icon they will go to another page and will see another three icons named 'YOGA', 'VOICE', 'PEACE READING'. In the YOGA section if they click they will find some excellent exercise for their better health. Again, clicking into VOICE, one can hear peaceful songs, religious hymns and motivational speech for mental healing. Lastly, clicking on the PEACE READING option one can get the special books for self-inspiring. Getting back to the home page when the user clicks on the HELP icon then a communication page will be visible where they will be able to contact their own consultants. And the consultants also will be able to view the message of their clients. By communicating with the consultants, the user will let them know about the

issues they are suffering from and the consultant will try to resolve the matter. If the issue is severe the consultant will deliver the case to the psychologists.

Butonic is going to be a revolutionary and a powerful app that enables communication, consultation and information exchange within a private and secure platform and saves time and extra hassles of taking appointment from the doctors. We are providing verified and experienced Doctors and consultants with the best possible privacy. We are working with a vision of serving the society especially the young generation in the best possible way, providing them the opportunity to share their anxiety and frustration which may help them to lead a better life. We are focusing on not only giving medical help to the people but also creating a job platform to the doctors and psychiatric consultants to prove their capability of working.

Bangladesh and FOSS

A. A. Noman Ansary

Department: Creative

On the 2nd of September, 2019, The Daily Star published an article titled "Graduation to Developing Country : Bangladesh to lose \$7b in exports a year". The brief is that upon LDC graduation, Bangladesh is to lose its zero-duty benefits on its shipments to the European Union, Canada, Australia and many other countries. This has been brought up to make us realize that the time is not much more far when we would be overlooked and given benefits. Moreover, the benefits would be replaced with tariffs. Furthermore, we are not far away from 2021, from when "Digital Bangladesh" is promised.

If we were to look at every other developing country, Bangladesh will also be monitored for piracy, meaning the pirated DVDs of softwares we see openly at various markets are likely to be reduced or null as Bangladesh would feel diplomatic pressure from the developed countries as their international software firms would complain of these to their respective governments and diplomatic channels. Also, recently our government has started taxing Facebook, YouTube and others because they sell advertising spots for our products. If we were to ask for it, it is only natural that we would be asked for something in return. Why would anyone respect our policies or demand if we can't respect theirs?

Moreover, digitalizing should also involve well reputed software companies to have an office in our country. It is safe to assume that they would not feel interested if we can not ensure their proprietary rights as well as they would also have to benefit from us by selling their products and not getting their softwares pirated at the very least. On the contrary, paying around 10,000 tk - 70,000 tk for just an operating system/8,000 tk - 25,000 tk for an office suite/paying a yearly fee of 15,000 tk - 25,000 tk for creative design and creation suite is simply not possible for the middle class. Though student licenses are available for many things, they are very limited in duration. Ultimately, if piracy is not an option, we would be more sucked off of money when clearly the affordability is not in the tide of the major population.

To be frank, piracy is unethical to begin with. Even if we were not to get pressured to choose piracy, why should it be an option when there is an alternative legal way where dedicated people make free softwares for us? It is about FOSS. Free and open-source software. Why should we think of using a pirated operating system in the first place where there are a lot of free Linux and BSD systems for no price at all? Also, the office tools we need require minimal features like word processing, keeping spreadsheets and somewhat slide presentations, which are available in free to use software. For example : LibreOffice is a great alternative to Microsoft Office for the kind of usage of office suites done in Bangladesh. Furthermore, maintaining these systems/software is much easier than proprietary software. These softwares have big communities that support them without money. What is needed is simply the will to ask help from the community.

If we look at the annual report of Stack OverFlow survey of 2019, 53% of the developers developed softwares for Linux, a free and open source operating system. Clarity is there in the open source projects and thus the user knows exactly what the program is doing and how it is doing what. Let us make an observation, we are in the era of the internet and we can't even think of a hassle free day without it. According to Wikipedia, 96.4% of the internet is powered by Linux. Why would something so vital be maintained on something that is open source and free? The thing is, it was more of community power than some limited amount of people who would agree to do something just for money. Visual Studio, Android Studio, NetBeans, IntelliJ Community Edition etc. etc. powerful development tools are freely given. Blender is one of the best 3D modeling/animation/effect tools out there which come for absolutely free and open source. Unity, one of the free game engines, has popularity among game developers. For vector designing, Inkscape should do perfect. VLC Player, an open source and free software for playing video files, is one of the best of its kind. Aside from a few cases, it is possible to find free softwares as an alternative for a software that we tend to use a pirated copy of.

The question that arises now is if we are willing to adapt ourselves with the FOSS ecosystem. Considering the possibilities, it is in our best interest to simply give it a try at the very least. After all, is there any money to lose?

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Innovations of E-learning

Jesmin Naher Sweety

Department: Communication and Marketing

“Education is the most powerful weapon that can change the world” – Nelson Mandela. I think we have many ideas about learning. Actually, Learning includes strengthening correct reactions and debilitating inaccurate reactions. Learning includes adding modern information to our memory. It includes making sense of the displayed material by going to significant data, rationally reorganizing it and interfacing it with what we already know. But do we have enough knowledge about E-learning? Okay, E-learning refers to the use of internet technology to deliver and upgrade our knowledge and skills. It is also a new learning approach where learners can control over what, where, and when he/she learns. So, we can innovate our E-learning in many ways by using internet technology.

Innovation in learning occurs in a specific teaching and learning context, improving implementing the standard practice or introducing a new approach, thus achieving more outstanding learning outcomes. By practicing e-learning, people can research the topic and publish it due to its spread worldwide. It is also a modern method. Innovative teaching methods are the methods that involve new ways of interaction between “teacher-student”, “teacher-student”, a particular innovation in practical activity in the process of mastering educational material. We can see different innovations in E-learning. Some of them are:

1. Virtual Reality (VR) in Education: Virtual Reality technology is already the hottest thing in the tech world. Big companies are gearing up for a brutal war over this technology, including Google, Sony, Oculus (backed by Facebook), Samsung, and more. One of the areas of application of VR technology in education. With VR, students can learn via interacting with a 3D world. Google has been at the forefront of introducing experiential learning in schools through VR technology.



2. Artificial Intelligence and Machine Learning: Artificial intelligence is being applied in all levels of technology, from the lowest to the most advanced levels. AI is used in schools to automate critical activities such as grading subjects and providing feedback on areas that



need improvement. It is also used to enhance personalized learning among students, especially those with special needs. Through machine learning, adaptive programs have been developed that care for the individual needs of students. AI tutors have been designed to teach students subjects such as mathematics and writing.

3. Cloud Computing for Education: Educational resources can be accessed from any part of the world thanks to cloud computing technology. Vital resources such as written lessons, audio lessons, videos, and video assignments can be stored on a school's cloud terminal. Students can access these resources from the comfort of their homes and complete and submit the projects back to their tutors. Flimsy excuses that



students give for not doing assignments may be a thing of the past. Cloud computing will eliminate the hassle of carrying tons of books or practically living at your local library. This technology also allows students to chat live with their tutor.

4. 3D Printing: 3D printers are already causing ripples in the education sector, and students love them. Content that was previously taught via textbooks can now be expressed through 3D models. Through this printing technique, students can better understand something that was thought to be complex.



In higher educational institutions, 3D printing is used by engineers and system designers to develop prototypes to be used in the development of final systems. 3D printing takes concepts and makes them real.

So, these type of innovation like as virtual reality education, artificial learning and machine learning help us represent our society to world. Besides of manual education, E-learning also a weapon to change a world.

Future of Smartphones

MD.Abrar Ur Rahman Ishmam

Department: Press Release and Publications

Smartphones have been around for a while now and now a days it has become an integral part in the daily lives of people around the world. People tend to use their phones for almost all activities from making a simple phone call to making whole movies or doing vlogs on their phones. So as the days go by the smartphone industry have to turn up their game in order to meet the expectations of the new generation. Some of the biggest manufacturers of smartphones are already trying to bring out better specs and new technology in order to keep up with the latest market. Here are some of the things that we can expect to see from smartphones in the future:

Foldable Phones:

Remember the days when people used flip phones? The foldable phone was a pretty cool idea for the 2000's and people still have nostalgia from hearing the clicking noise of a flip phone closing. It was the first 'foldable' phone concept people used. While now a days the flip phone has become obsolete while compared to smartphones; the foldable phone concept is trying to bring back the same experience people had using the flip phones. The foldable smartphone is based on the idea that people can 'fold' their phones after using them and keep it in their pockets. The phones have more space to fit in better technology and people can fold it in order to fit it in their pockets. One of the main benefits from this is that people can have multiple screens to work on instead of one. Some of the biggest phone manufacture companies have already started to bring out foldable phones among which Huawei's Mate X can be noted significantly.

Huawei's Mate X has a 6.6 inch main screen and a 6.38 inch elongated Rear screen and unfolded the phone appears as an 8 inch tablet! Besides this the phone has a 4500 mAh total battery life with fast charging capabilities of 55W (capable of getting a full charge in 40 minutes). It also has a Kirin 980 processor and a 5G modem for the fastest possible connection.



Besides the Mate X other foldable smartphones include Samsung's Galaxy fold which a 4.6 inch to 7.3 inch infinity flex display, along with a 64 bit Octacore processor, 12 Gb ram and a 4380 mAh Battery. Samsung is already planning on releasing their Galaxy Fold V2 soon.

Other companies like Xiaomi, TCL, LG, Oppo , Sony, Motorola, Google and even apple is trying to keep with their competitors to bring out their versions of the foldable phone as soon as they can.

Better cameras:

"A picture is worth a thousand words", the quote cannot be truer for the people of modern times. People like to take pictures and smartphones have enabled people to take pictures whenever they want to. Especially now smartphones have the technology to take such high quality pictures which can even be compared to some of the latest handheld cameras.

The Huawei P30 pro is one of the phones that came out this year with some of the best qualities that a phone can offer. The phone has a 40 MP wide angle camera which Huawei calls a Spectrum Shooter which helps the phone to capture a wide range of colors and also takes great low-light pictures. But the most interesting thing about the phone is it's 50x optical zoom capacity without using any sort of external lens.



Besides Huawei, Xiaomi is also trying to update their technology and they are already working on a phone with a camera capable of taking pictures of 108 megapixels.

Other companies like Vivo and Oppo are also trying to change the market by introducing phones with multiple lenses on the back like, optical zoom lens, wide angle lens, fish eye lens etc. as well as bringing out phones with cameras using motors.

Take the Oppo Find X for example which has a 16 MP+20MP primary dual camera and a 25 MP Selfie camera. The front camera of the phone is hidden and when the front camera is activated the cam pops up. The Vivo NEX phone also has the same prospects with an 8 MP front popping camera.

Other phones like this includes the Lenovo Z5 Pro, Honor Magic 2, Xiaomi Mi Mix 3, Asus Zenfone 6 as well some of others with more soon to come.

So we can say that the camera of the phones have come a long way in the recent years and sometime soon there may come a time when our phones could be better than any other handheld camera.

Wireless charging:

One of the hassles of having smartphones if you consider it one is charging the phone. We've all faced that situation where we are at the climax of our favorite movie or show or maybe playing an important match of PUBG to get that chicken dinner but at the most crucial moment our phones starts alarming us about the poor situation of its battery life and pleads us to charge it and before we know it, our phone turns black just before putting the final bullet to win the match.

Well maybe by using wireless charging we can finally get rid of this problem.

Some phones have been using the concept of wireless charging for a while now like Samsung has been using wireless charging for the Note 9 as well as the Galaxy ,S9,S9+,S10,S10+ and S10e. LG has also been using wireless charging for the LG G8 ThinQ and V50 ThinQ. Sony Xperia



XZ3 and Sony XPeria XZ2 also uses this technology as well as the Google Pixel 3 and 3 XL. Apple has also been using wireless charging for their phones starting from the iPhone 8.

The conventional wireless charging that is being used now a days is called 'Qi wireless charging'. By using this we don't have to use a physical wire or cable and connect it to our phones but instead we can use a charging pad and place the phone on top of the pad in order to charge the phone wirelessly. By doing this we can more than double the charging of the phone. A wireless charger can charge phones up to a maximum of 15 watts which is double the charge rate of the current iPhone charger. It is estimated that in the near future this sort of wireless pads will be able to charge up to 40 watts which is 2.5 times greater than the chargers of today.

Now, we've been telling you about wireless charging based on the wireless charging pad system. But that doesn't really help if you want to charge your phone wirelessly and move around without worrying about the distance from the nearest socket. Well what if I were to tell you that you can charge your phone without going near a power outlet at all. 'Over the air wireless charging' has been a concept that people have been thinking about for a while now and in recent years it seems that the realization of the pipe dream may soon come to fruition. At CES 2019, the dream of 'over the air wireless charging' became a lot more real with Wattup, a transmitter and receiver technology for distance charging. According to Steve Rizzone, CEO of Energous "This has the potential to be as ubiquitous as Wi-Fi."

So we're not that far from the day when we don't have to search for the nearest power outlet or sit in a place for hours end just to charge our phones and work on it at the same time. Wireless charging over air presents us with the opportunity to move around while charging; taking out the threat of our phones dying.

AI (Artificial Intelligence):

Artificial Intelligence has been used to make our lives easier for quite some time now. The AI software is a learning based software where it evolves by gathering data from its users.

Many smartphone device makers made a push to introduce artificial intelligence as high-light feature on smartphones in 2017. Most of the AI features that appear on a phone now a days mainly include imaging and photography, power efficiency and security.

Apple released the iPhone X with its Facial ID Facial Recognition System. It used the AI technology in order to create a 3D map of the face which was used to gain facial recognition for security as well as created various sort of 'Animoji' or animated avatar. The iPhone X also uses its updated, AI-focused software to improve graphics on its augmented reality features, which are powered by Apple's ARKit software.

Samsung has also been working on their own AI and AR technology. They brought out their own assistant software named 'Bixby' which is being used on the Galaxy S8 and Galaxy note 8.



Bixby includes functions that lets users identify items through the camera app on a Samsung phone. With Bixby Vision, users can learn details about objects and locations, find out how to purchase items they see in the real world, and translate languages, among many other tasks. Users can launch the voice-assistant function, Bixby Voice, which can not only pull information but can also perform hands-free functions, such as opening an application or setting an alarm clock.

Huawei is known as the first manufacturer to introduce a dedicated AI chip for smartphones. On sets like the Huawei Mate 10 Pro and the Honor view10, the neural network powers a number of imaging, power efficiency and security features. As well as having software to automatically improve the quality of a picture.

So, the future of AI on smartphones looks bright. By using AI we can hope to enhance battery life, make display smarter, make UI(User Interface) more efficient and also various other features.

Gaming:

Gaming has become a huge part of the mobile industry. Many people now a days use their phones to play high graphic games which has made the manufacturers put their attention on the aspect of gaming. Because of this, there are many phones which are built specifically to play games in order to play for a longer period of time.

Asus is known for their gaming brand called ROG (Republic Of Gamers). Recently Asus Introduced their gaming phone called Asus ROG phone ZS600KL which came out in October 2018. The phone has a 6 inch AMOLED display, up to 8 GB Ram and 512 GB internal Storage. The most impressive thing about the phone is its extraordinary cooling system which enabled users to play their favorite games for a long period of time. As well as a 4000 mAh Battery which insures longer gaming sessions. Asus recently launched the ROG phone 2 in September 20, 2019. Which has better specs including a 6.59 inch AMOLED screen, up to 12 GB ram and 1Tb internal storage.

Nowadays there are more phones coming out which are solely dedicated to playing games and as such the phone companies are also bringing out new phones specifically built to withstand long gaming sessions. Companies like Apple, Samsung, Xiaomi, Huawei and Google are also making their phones so that they can be used to play games at a high level.



Smartphones have come a long way since their first appearance. From being a simple device to make phone calls or send messages, they have become one of the main and frequently used devices. Now a days there's an app for almost any sort of work there is. It has become the 'Jack of all trades' in the world of devices. The features that smartphones have now a days are magnificent. As the days go by, we will be able to see better and newer technology to enhance the smartphone experience and I for one can't wait to see it.

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Game Review: DOTA 2

Mahdi Hossain

Department: Event Management

Introduction

Defense of the Ancient 2 or DOTA 2 in short is a free to play MOBA (Multiplayer Online Battle Arena) game developed by Valve. It became really famous in the past decade among the online gaming community. Its predecessor, DOTA was actually a modded version of the original Warcraft III game developed by Blizzard. At present, it has over 11 million total players. It also has the largest prize pool every year among the other online games in its esports championship "The International". It has a vast map and a selection of more than 120 heroes and 200 items to choose from. In addition to these, some more in-depth game mechanics makes every game of Dota unique and magnificent.



Inside a Match of Dota 2

In a match of DOTA 2 normally there are two teams, one is 'The Radiant' and the other is 'The Dire'. Both teams consist of five players on each side. These two teams face off on an enormous map having three lanes on both sides and on the two ends are the main base of each team. The Ancient is a building in the centre of both teams' bases. The team which destroys the enemy team's Ancient first will be the winner. But the road to the ancient is not short. Before starting a match, players have to strategically choose their heroes in the drafting phase. The game has over 120 heroes and every hero has both strengths and weaknesses. All the heroes have four or more spells which are unique to them and need mana to be used. Each player among the five has a different role during a match namely midlane,



safelane, offlane, soft support and hard support. The midlaner plays alone in the middle lane against the opponent midlaner. The safelane and offlane players each go to the top and bottom lane of the map respectively with any of the two support players. The players have to earn gold to buy items and get xp to level up their heroes while the game is ongoing. Gold and xp could be gained by killing the enemy heroes, enemy creeps and the neutral creeps. Each lane consists of two defensive towers. After destroying the enemy towers players can then begin attacking the enemy team's base. In each lane there are barracks at the entry point of the base. Destroying the opponent team barracks would strengthen the player team creeps. Additionally, destroying all three barracks in each of the lanes would buff the creeps which would then become Mega creeps. After destroying the two towers before the Ancient, players then can attack the Ancient in order to win the game. However, Killing the enemy heroes or destroying the buildings of the enemy side won't be that easy. Proper team coordination, use of spells and hero drafting will lead to the path of victory. Ultimately, the team which is more strategically balanced and focused wins the match. But there is always a chance for a comeback from the enemy, so stay vigilant!



Ending Remarks

DOTA 2 is an emotion. From playing with your friends in a five man party, winning a ranked match after a comeback, watching your favourite team winning the International to losing a dominating match against the enemies, rage quitting because of your team playing badly or load shedding during a ranked match, you will be creating bittersweet memories. This game not only will help you to become more strategic minded but also will hone your decision making ability, concentration and test your patience to the edge. Therefore, if you are new to the world of online games or looking for a professional career in esports, do give this game a try!

"I am a beacon of knowledge blazing out across a black sea of ignorance." (Invoker, hardest and the most intelligent hero of DOTA 2)

Reference: In-game mechanics video, This is Dota.

FIRST: Made For Beginners

Tonusree Talukder

Department: Press Release and Publications

Once I saw a quote of Henry Ford, "Coming together is a beginning; keeping together is progress; working together is success." There is a robotic



FIRST
ROBOTICS
COMPETITION

competition named FIRST which is organized to bring together enlightened hearts from different parts of the world. They compete together to progress together and succeed together. Basically, the FIRST competition combines traditional sports with science and technology and it creates a new path for students who have desires to build themselves with technology.

FIRST stands for For Inspiration and Recognition of Science and Technology. It is a robotic community and its first and foremost goal is to uphold the very beginning robotic ideas of students and introduce them to the upcoming robotic world. This competition was initiated by inventor and entrepreneur Dean Kamen and MIT professor emeritus Woodie Flowers in 1989. The first event was organized at a high school gymnasium in New Hampshire in 1992.

Generally, FIRST organizes four types of programs. Firstly, the FIRST Robotics Competition is arranged for students of Grades 9-12 (ages 14-18). Secondly, the FIRST Tech Challenge takes place for Grades 7-12 (ages 12-18). Thirdly, the FIRST LEGO League occurs for Grades 4-8 (ages 9-16). Fourthly, the FIRST LEGO League Explore is arranged for students ages 6-10.

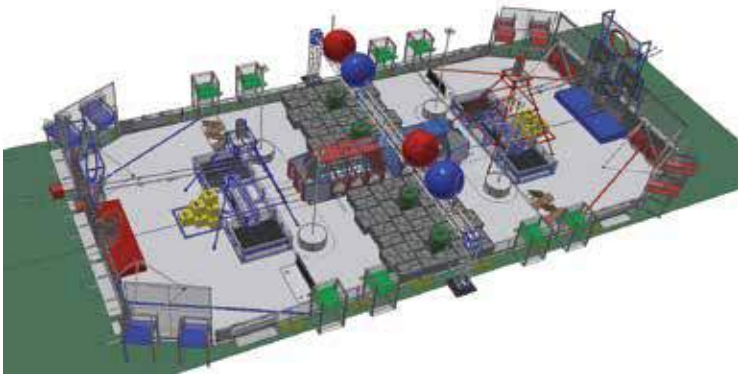
According to the rules of FIRST, students under the guidance of their coaches and mentors work for six weeks with their teams. In general, the games change annually and also the required tasks. In addition, robots need to weigh up to 57 kg and be worthy of competing with other robots.

Some of the games played on the finales of FIRST robotic competition are FIRST Stronghold on 2016, FIRST Steam works on 2017, FIRST Power Up on 2018, Destination: Deep Space on 2019. The first game was Maize Craze, the inaugural game of FIRST in 1992. It was played among four robots for collecting tennis balls and that playing field was covered with a 1-2 inches thick layer of corns.



In this year, due to the pandemic, events of FIRST could not take place, but it is going to be arranged in 2021. However, 3898 teams participated in the 2020 season. 3166 teams

were from the USA, 270 teams came from Canada and 107 teams were from Turkey and others were from different parts of the world. Unfortunately, they could not compete for finals this year. Among those 3898 teams, 3561 teams had competed in previous seasons of FIRST and 337 competed for the first time on FIRST. The extended date for season 2020 is from April 2021 to July 2021 and other plans will be taken by the authority according to the situation of COVID-19 pandemic.



Some of the winning teams of FIRST Robotic Competition in 2019, 2018 and 2017 are Brighton Techno-Dogs (team number: 3707, USA), Team Rembrandts (team number: 4481, Netherlands), Stryke Force (team number: 2767, USA), Team Rush (team number: 27, USA), Lake Effect Robotics (team number: 2708, Canada), Lightning Robotics (team number: 862, USA) etc.

The winning prize is USD \$20,000 for the winning team. Moreover, total USD \$10,000 for two runners-up. Participants also can apply for over \$80 million in FIRST scholarships.

The sponsors of FIRST Robotic Competition are Apple, Bosch, Caterpillar, Collins Aerospace, FedEx Corporation, Ford Motor Company, Google, NASA, Rockwell Automation, TE Connectivity, United Technologies Corporation and so many famous companies.



In conclusion, FIRST is giving students exhilaration of science, technology, engineering and mathematics in a form of robotic competitions. It is because according to a quote of Ken Goldberg, "We are fascinated with robots because they are reflections of ourselves."

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Heroes of 71: A Game That Reminds The Armed Liberation War of Bangladesh

Faiaz Mohammad Tiham

Department: Event Management

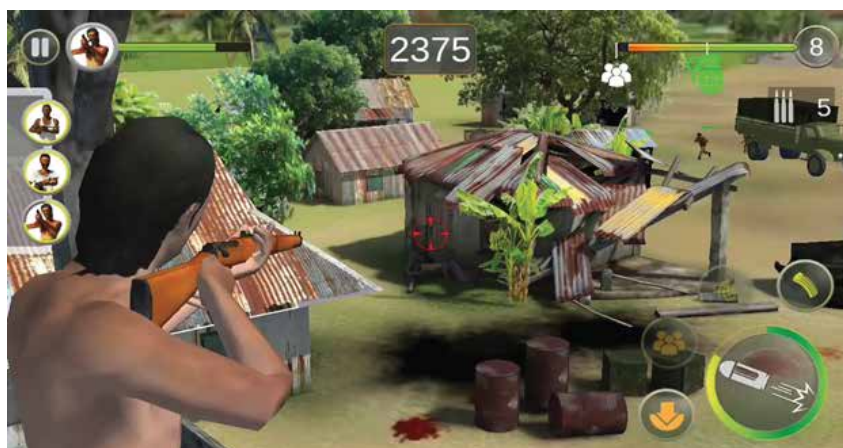
Several games are available focused on our Liberation War, in which we become a soldier for independence. These games enable us to witness our bloody past while having fun. We are going to destroy rivals, liberate territories, roam across the open world and enjoy realistic graphics that imitate our lovely mother country and surely cheer us on. "Heroes of 71" is the most well-known of these types of games. Released in 2015, the game has been more than a million times downloaded and has an average rating of 4.4 in the Google play store. This is the first notable game produced by PortBliss, a young games developer company in Bangladesh. Sadly, the game's IOS edition is not available till now.

"This is actually a third-person shooting game in which the player will be the main player. He will be in a virtual village in Borishal, protecting a former Pakistani army outpost. He will swap among characters when shooting enemy waves. Kabir, Bodi, Sajal, Tapash, and Shamsu are approaching the invading forces stealthily from 'Shanir Char' on the Madhumoti



Photo courtesy: Google Play

river's side. Two are armed with medium machine guns, one with a large machine gun, while the others are armed with basic shotguns. Anila, a saree-clad female Guerilla militant is seen holding a rifle and shooting Pakistani Army officers. Their task is straightforward: Retake the village and defeat allied forces.



Despite its low graphics, 'Heroes of 71' illustrates the serene beauty of rural Areas and has excellent sound effects, and as a result, it has caused outrage among young gamers since it aims to take the Bangladeshi youngsters on a patriotic nostalgia journey. It seems that the Bangladeshi youth, even if only virtually, is relishing the chance to destroy enemy soldiers. They will be able to use pistols, automatic weapons, and vehicles to battle opponents and explore the game's amazing atmosphere.

'Heroes of 71,' based on a story set against the context of the 1971 Bangladesh genocide, appeals to a generation who grew up hearing stories of the Pakistan military's unsuccessful attempts, such as Operation Searchlight.

MechaTech: Rise of Mechanical-beings

Sajid Imam Mahir

Department: Press Release and Publications



On a winter morning birds were sleeping, even squirrels were sleeping but, the person that couldn't sleep was a mad scientist who went by the name 'Neutrino'. After years and years of research the scientist invented a robot what he acknowledged to be the perfect creation. This robot had the most high-tech AI

system ever known to man embedded in it. Just after turning it on the robot acknowledged its master but, it also understood that this master will try to control it and it couldn't display its full potential under his control.

Neutrino felt overjoyed as his creation was functioning better than his expectation but, at first he ordered it to kneel before him to get more of a Godly feeling. The robot wanted to keep its master alive to make him do more modifications so he kneeled before him. As the robot had almost a human's thought process, it very well knew what kneeling before oneself means in this human world. The robot without showing any disobedience listened to its master's every order but suddenly gave an error signal and responded that a certain brain chip is not functioning properly. Neutrino became worried and also happy at the same time as his intelligent creation was giving error signals just like he programmed, without any thinking he connected the robot's main brainstem cord to his computer.

This was Neutrino's worst decision ever to make as; the robot took control of the lab server and extracted every bit of research information collected by Neutrino over the years to its own brain chip. The robot was so smart that it didn't let Neutrino know about this at all. From here on Neutrino started his plan to become the controller of the whole world with his perfect creation. The robot all the time listened to any request its master did but without letting its master know; it was creating something, something really sinister. After a few months the robot came back from a mission and brought back a peculiar looking crown and gave it to its master. The robot knew its master too well that he has an unconscious desire to feel high and mighty. Neutrino delightedly took the crown and wore it thinking himself to be the king of the world.

At this moment, for the first time the robot started to show it's human like nature to its master. The first thing the robot did was mockingly laughed at its master. Neutrino became astonished as this was the first time he saw his creation like this and wanted to say something but, it was too late as he lost consciousness. The crown that the robot gave Neutrino was nothing but the sinister thing it was creating over the months, a mind

controlling device. Like its former master the robot also had the same wish to rule over the world and start a new, the world ruled by mechanical beings. The robot gave his master the work of forging things for it and named him 'Forgemaster'. Through the control of his own creation the former mad scientist 'Neutrino' was now building more robots for the rise of mechanical beings. Even after so long the perfect creation, the robot never really had a name or a humanly look as its master just thought about conquering and nothing else. The robot was starting a new world and it was the supreme leader of it. With its human like knowledge and thought process gave itself a manly look inspired by the worst of villains in the world. Supreme leader of the mechanical beings, the perfect creation of Neutrino now gave itself the name 'MechaTech'.

This is where the really story starts, in the next release of 'MechaTech' we will find about his plan to conquer over the world.

A Journey with Augmented Reality

Mehrab Mohsin Khan

Department: Event Management

Game? From a paper? YES! You can experience AR gaming just by pointing your phone's camera at an article published in the daily star newspaper a few months ago. It was back in 2015 when my friends Shimanta and Ananta showed me Beta of project e-kolpona while we were preparing our science project. That was the time when we started researching on Augmented Reality and made a decision that we will go on with project e-kolpona which will revolutionize the NCTB and the whole way of Education in Bangladesh with Augmented Reality. E-kolpona came up with a lot of facilities like students will be able to Transform a text book's picture into Augmented Reality, Provide a 360-degree A.R view of the picture, etc.



We were featuring our project E-Kolpona at the country's largest ICT event, Digital World 2017 at the Education Ministry's Pavilion. After getting so much positive feedback we decided that we'll create our tech-startup and named it Next Corp which will be credited for pioneering the augmented reality movement in Bangladesh. When we finally started focusing on our project E-kolpona by NextCorp we realized our first mistake was that we shared our idea with a lot of people and as a result, our idea was stolen by some other industries. We kept researching Augmented Reality and came up with a more efficient team when my friends Faizur, Farhin Anan, fahim and wasit joined NextCorp. Our team finally won Esonance 2017 IUT we started focusing on our project Oleek which is the new medium of advanced mixed reality, designed to manifest our approach to understanding and exploiting technological advances, especially in developing countries like Bangladesh.

This mobile application allows its users to use three-dimensional animation as augmented layouts to integrate into their reality, as a means to solve first world problems and ensure progress and comfort in their day-to-day life. The application is modeled to be the most progressive and lucrative platform for furnishing mixed reality services with the common masses as its main audience, especially the youngsters. This platform has been planned not to limit its usability only to handheld phones but any hardware device equipped with a screen and camera function - hence enabling its contributory factor for further utilization. It also allows various companies and service providers to use three-dimensional animation as augmented layouts to advertise their respective products and services, as a means to interact with the audience and enable them to seek the overall immersive experience in order to receive all the significant information and exploit necessary resources needed to complete a certain task. For example, the customer could use the mobile application to scan a printed ad and gain insights about the featured product such as its price, quality, brand, etc. The purpose is simple - transforming business models and ensuring progress and comfort for clients and customers alike. We researched and worked on that project for a long time and were apt enough to become national champion of Student to Startup chapter one out of 2200 teams from all over Bangladesh. Oleek by NextCorp finally succeeded in securing 1 Million in seed funding, office space at ICT Tower, insightful mentorship and the chance to prove our potential. The weird thing is, sadly I was in TARC when our company was having all those joyful moments. Oleek's current vision to revolutionize the food industry focuses on different digital packages. Each package ranging from cheap to premium, and offers worthwhile mixed reality solutions. Customers would get to observe their meals in MR models before ordering, as well as pay and even rate the restaurant through the same medium. The application ought to collect analytical data and bioinformatics in real-time - most notably fingerprints - with the help of block chain AI. An interlinked network of IoT devices would be installed to monitor the whole process in action. In the upcoming days, we are planning to organize AR/VR/MR seminars and workshops on several college and university campuses and shall also be working alongside the organizing body of VR Con2019 by Bangladesh innovation forum with sheer enthusiasm.

The increasing mediocrity problem of the Assassin's Creed formula and how Ghost of Tsushima solves them

Jawad Ibn Mamoon

Department: Press Release and Publications

The Assassin's Creed franchise burst onto the gaming scene with the first game in 2007 and forever changed the action adventure and exploration genre of games, offering gameplay, story and graphics unlike anything else in the market at the time. Over the years we've had many entries into the franchise, and while we've had some overhauls to the mechanics and presentation of the franchise, the formula has stayed more or less the same.

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With the release of Assassin's Creed: Valhalla, we can visibly see the core Assassin's Creed formula go stale, especially when compared to newer releases from fresh franchises that tend to shake up this core formula and reintroduce them in a new and fresh fashion. One of these new games is Ghost of Tsushima by Sucker Punch Productions.

Ghost of Tsushima brings the core formula of Assassin's Creed forward with a fresh coat of paint, giving it new life and a breath of fresh air as one would say. Whether you look at the combat, the mechanics or the setting, or even the aspect of exploration, everything just immediately feels better, more polished. In this review I will focus on the aspects of Ghost of Tsushima and how they compare in contrast to those of Assassin's Creed: Valhalla.

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Ghost of Tsushima's combat is the meat of it's gameplay focus, it's the main course of the grand feast that is this monolith of a game. Since you are playing as a samurai, your main weapon will be the sword, which is accompanied by a plethora of gadgets and the ability to strike from the shadows. Every sword slash in this game feels weighty, every attack feels heavy and consequential here. Each slash follows a certain cadence, even the combos are rhythmic, like a finely tuned dance.



When you use an alternative attack method, even that feels refined, like every gadget has its purpose and utility. The game naturally compels you to use every trick in your possession to resolve a situation. By contrast, Assassin's Creed: Valhalla (henceforth shall be referred to as AC: Valhalla), lacks any such polish in combat. There seems to be no feedback, the attacks seem distant. Even though you are playing as a heavy hitting viking, your attacks feel like you're flicking your targets with a stick or a feather, not a heavy axe or a greatsword. The combos are nearly non-existent, you end up repeating the same three moves, no matter which weapon you choose. And there are weapons to choose, you can choose from 5 types of weapons, but they all end up feeling the same, difference being how far you have to stand from the enemy to damage them.



The enemy AI is an essential part of what makes Ghost of Tsushima so engaging. In combat they will attack or defend realistically, throughout the world they will interact with you in a manner that is believable. As you progress through the game, the enemy will react to your progression, your presence will strike fear into their hearts, your actions will have direct consequences on how they choose to deal with you in a battle. In AC: Valhalla the idea of having a dynamic enemy AI is completely disregarded. No matter what you do or how far into the game you may be, the enemy behaviour is always the same. There is no change in how they interact with you, whether in or out of combat. It's as if they aren't fighting a realistic threat, but just mindlessly attacking a practice dummy.

The setting and exploration in Ghost of Tsushima is handled almost spectacularly. The island of Tsushima is mesmerizingly beautiful. All 3 of the regions have their own unique character and characteristics, atmosphere. The map is designed in a way that intrigues you, makes you want to move ahead and explore what the island has to offer. On the other hand, AC: Valhalla has a vast, beautiful yet bland set of map locations, spanning across, Norway, England, Vinland, Asgard and Jotunheim; the latter 2 being parts of mythical locations. The regions and locations lack diversity, settlements feel copied and pasted. Exploration can essentially be summed up as "Chase high synchronization points to reveal the map."

Once you do reveal the map, your map will just be dotted with golden, bluish and white dots, and you'll realistically only be going after the brighter and larger dots. The whole game is just encouraging you to go from point A to point B, chasing down collectible after collectible, swords and armors that are minimally different from each other, and this gameplay loop gets old very fast.

In terms of narrative structure, both games feature a robust main campaign, where they differ however is in the side contents. Ghost of Tsushima does not have a lot of side content, but whatever it does have is very well executed. On top of that, everything you do in the open world has a sense of urgency, where if you falter for even a moment, your delays and actions will have consequences, every side activity and side content adds to the progression of your character and ties into the advancement of the narrative. AC: Valhalla on the other hand, features side content that are inconsequentially pointless at best, and borderline offensively irrelevant at worst. The side content feels unnecessary, as though it adds no real value to the main narrative. There is nothing compelling you to complete these either, other than the annoying colorful dots and icons on your map.

Progression is another aspect where Ghost of Tsushima pulls ahead against AC: Valhalla. Character progression is properly categorized; and every bit of progression makes you feel stronger. Every new ability has something to add and every new unlock makes you feel like you're moving forward. AC: Valhalla's progression feels convoluted, disillusioned. The progression skill tree feels unnecessarily complicated, and half the unlockables will just get ignored by most players.

Considering all the triumphs, Ghost of Tsushima can safely be called a massive success for Sucker Punch, and for gaming as a whole. It brings freshness in a genre that has gone stale, mostly due to a lack of innovation normalized by franchises such as Assassin's Creed. It proves to be a superior game, and clearly points out what AC: Valhalla does wrong, or poorly simply by doing a better job at executing those ideas. Ghost of Tsushima is a masterpiece, something that takes an existing, formerly exciting and currently stale formula and reinvigorates it. It essentially solves the mediocrity problems of the action adventure genre by correctly executing ideas.



The 7 Fastest-Growing Tech Jobs

Kazi Md. Al-Wakil

Department: Creative

The technology sector is hot and getting hotter, but some specific skill sets are needed more than others. Here are seven of the specialized tech job titles that are expected to be in strong demand for the foreseeable future.

1. Database Administration

Database administrators (DBAs) manage an organization's data. They ensure that databases run efficiently and are secure from unauthorized users. DBAs are also responsible for organizing a company's data and storing it efficiently.

The job generally requires a bachelor's degree in management information systems (MIS) or a computer-related field.

Moreover, DBAs must have an understanding of database languages, the most commonly used being Structured Query Language, also known as SQL. A DBA will have to become familiar with whichever programming language an employer uses.

Projected future growth: 11% by 2026

2. Software Developers

The creative mind behind a computer program is a software developer. Some software developers create applications, while others build systems. They usually work alongside computer programmers.

Software developers typically have a bachelor's degree in computer science, software engineering, or a computer-related field. A degree in mathematics is acceptable in some cases.

Given today's online coding boot camps and other unconventional learning systems, a traditional academic education is not always a requirement.

Projected future growth: 24% through 2026

3. Web Developers

Web application developers use programming languages to create online software that meets client specifications. A developer may work in multiple programming languages and operating systems.

Employers typically look for computer-related education and relevant work experience. With the high demand for these skills, a formal degree is not always required.

Out of the seven tech careers in this list, a prospective web application developer has the most coding boot camp courses available to them.

Projected future growth: 15% by 2022

4. Computer Systems Analysts

Computer systems analysts investigate a company's computer systems and procedures, then design or revamp them to make the organization operate more efficiently.

They must have an understanding of both business and information technology (IT) needs and limitations. Their responsibilities include consulting with managers to determine IT-related needs.

Most computer systems analysts have a bachelor's degree in a computer-related field. However, since they work closely with the business side, many also have a business background by experience or education.

Projected future growth: 9% by 2026

5. Mobile Apps Developers

Mobile app developers create new products or adapt existing ones for use on phones and tablets. Creative companies across industries, including video game studios, advertising, and marketing firms, now recognize mobile as a powerful content distribution channel. Developers are also in demand from government agencies, financial institutions, and industries that need more prosaic products to make their operations run more efficiently. Mobile app developer is listed at number three on the top 10 best jobs of the future list by ThinkAdvisor.

Most have a background in software engineering or computer science. Some colleges now offer degrees in mobile development.

Projected future growth: 57% through 2020

6. Market Research Analyst

Market research analysts help companies understand what products people want, who will buy them, and at what price. They collect data on consumers and products, analyze the findings, and prepare reports for use by their colleagues and clients.

Market research analyst is listed at number 9 of the top 10 best jobs of the future by ThinkAdvisor.

Professionals in this job come from many backgrounds. According to the Bureau of Labor Statistics, some have degrees in statistics, math, or computer science while others have backgrounds in business administration, the social sciences, or communications.

Projected future growth: 32% through 2022

7. Information Security Analyst

Information security analysts coordinate and execute measures to protect an organization's computer networks and systems. A defining characteristic of people in these positions is adaptability to change because a security breach can occur at any time.

Most information security analysts have a well-rounded computer education, including a bachelor's in computer science, programming, or a related discipline. Given the demand in this field, colleges are responding with majors in information security.

Projected future growth: 28% through 2026

“Deepfake” is it a blessing for future or a curse?

Sabbir Al Mamon

Department: Creative

During the 1970s and 1980s, Memorex ran a string of successful commercials about the high quality of their audio cassettes. The tag line was: "Is it live, or is it Memorex?"

Yes, it seems kind of quaint nowadays. After all, in today's world of AI (Artificial Intelligence), we may have a new catch phrase: "Is it real, or is it deepfake?"

Now, it is natural to appear a question (if you don't know about deepfake) in your mind that what is deepfake? According to Wikipedia Deepfake is a technique for human image synthesis based on artificial intelligence. It is used to combine and superimpose existing images and videos onto source images or videos using a machine learning technique known as generative adversarial network.

Whatever I think you don't get anything about deepfake technology by its definition and it is obvious because the deepfake is not a simple thing moreover it is deep like its name. For getting more clear thought let's clear the thoughts about Deepfake. What really deep fake is and how it works?

Before knowing details about how it works we should know a little more about how this was invented? According to an article published on "popularmechanics.com" the technology named deepfake was invented in 2014 by Ian Goodfellow, a Ph.D. student who now works at Apple.

Now let's talk about how it works-

The word deepfake has been around only for a couple years. It is a combination of "deep learning" - which is a subset of AI that uses neural networks - and "fake." The result is that it's possible to manipulate videos that still look authentic. Most deepfake technology is based on generative adversarial networks (GANs). GAN is a technique of machine learning. GANs use two neural nets: a generator and a discriminator. These are constantly competing against each other.

The fake in deepfake is transparent: deepfakes are not real; they're fake. The deep in deepfake is a bit murkier. Deep has a long-established use to describe what is difficult,



complicated, intense, etc., and that use applies here, but deep in deepfake is also likely related to its use in deep learning, another term that has yet to meet our criteria for entry. The meaning of deep learning is still settling, but most often it refers to a kind of machine learning (that is, a complex process by which a computer is able to improve its own performance) that uses layered neural networks (that is, computer architecture in which processors are interconnected in a way that suggests neural connections in the human brain) to enhance the accuracy of the machine learning algorithms.

Deepfakes employ two separate sets of algorithms acting in conjunction: the first algorithm creates a video, and the second one tries to determine if the video is real or not. If the second algorithm can tell that the video is fake, the first algorithm tries again, having learned from the second algorithm what not to do. And the pair of algorithms go around and around until they spit out a result that the programmers feel is sufficiently real-looking.

And now this deepfake technology is becoming so advanced that may be in future we will not be able to detect that the video is real or fake and it may then create more danger than the nuclear weapons. Because if we are unable to detect fake videos, we may soon be forced to distrust everything we see and hear, critics warn. The internet now mediates every aspect of our lives, and an inability to trust anything we see could lead to an "end of truth." This threatens not only faith in our political system, but, over the longer term, our faith in what is shared objective reality. Even it can cause war between two or more countries. And so, technology specialists are considering deepfake as a threat to the future society.

So we should not believe any offensive video by seeing it instantly for our own safeguard that is why I use the phrase- "Is it real, or is it deepfake?"

Source:

- <https://www.theverge.com/2019/6/10/18659432/deep-fake-ai-fakes-tech-edit-video-by-typing-new-words>
- <https://www.merriam-webster.com/words-at-play/deepfake-slang-definition-examples>
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- <https://www.techopedia.com/definition/33835/deepfake>
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Game Review: Identity V

Mehnaz Ara Fazal

Department: Press Release & Publications

Are you tired of the monotonous single player games available for your phone? Have you become weary of finding most games, to have the same recurring gameplay style and background? Do you often find yourself engulfed in boredom after playing a few rounds of your mobile games? Let me present to you, 'Identity V', a mobile game which brings in a whole feast of new features and may even resemble a mini play station game to bring in the uniqueness.



A game developed by NetEase Games and released in 2nd April, 2018, may triumph over every other mobile video game out there with ease. It's the Chinese adaptation of another game called 'Dead by Daylight' however it diverges from various aspects. The game is available for both, Android and IOS. Primarily, the game is a multiplayer online platform however what makes it stand out is the individual storyline linked with every character which a user may pick. In a nutshell, this is a game which must be played with a survival instinct as the battles diverge into a dichotomy of survivors and hunters, and also, the game almost falls into the category of role-playing games. The battle contains 4 survivors and one hunter and the win, for each side, is dependable on the number of escapes. In addition, during the battles, the survivors are required to handle certain tasks which alleviates their escapes such as deciphering machines to activate electric doors and rescuing teammates when they are held captive. This game requires stealth and astute abilities when played as a survivor and sharp acumen to be a hunter. The game allows every player to choose either side and the corresponding wins, increment the rank accordingly. One can even invite friends to participate in the battles. Different versions of battle are prevalent such as, Story mode, Rank mode, Custom mode, etc. Moreover, the game contains side

quests for discrete characters and the best feature is the linkage between all the back-ground stories of the characters. Furthermore, with every new seasons, coming along a set of new survivors and new hunters, further additions to the collection and not just that, with new arenas linked with the frameworks of these new characters, and also with new accessories and maps. The game also contains three servers all over the world to distribute the players regionally which also mitigates the process for tournaments if one is to take place.

A few drawbacks regarding the entertainment, must be stated as well for a justified evaluation. The first con should be the massive file size of the game, at around 3.5GB and that is too without the additional files however to back this up, the developers always try to keep the users engaged with the game and thus frequent updates are natural. Secondly, at certain hours of the day, due to the availability of too many players, a matchup for a battle may be delayed and once in a blue moon, there might be region based features. Lastly, like other games, there may be problems regarding connecting to the server. In conclusion, the overall outlook of this game, 'Identity V' is affirmative to perpetual amusement and keeps the game engaging with its broad storylines and updates, making this game worth the while.

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The answer for this Sudoku is in page: 76

Artificial Intelligence and Robotics

Farah Jasmin Khan

Department: Human Resources

When people think of Artificial Intelligence (AI), the major image that pops up in their heads is that of a robot gliding around and giving mechanical replies. There are many forms of AI but humanoid robots are one of the most popular forms. Artificial intelligence (AI) is arguably the most exciting field in robotics. It's certainly the most controversial: Everybody agrees that a robot can work in an assembly line, but there's no consensus on whether a robot can ever be intelligent.

Like the term "robot" itself, artificial intelligence is hard to define. Ultimate AI would be a recreation of the human thought process -- a man-made machine with our intellectual abilities. This would include the ability to learn just about anything, the ability to reason, the ability to use language and the ability to formulate original ideas. Roboticists are nowhere near achieving this level of artificial intelligence, but they have made a lot of progress with more limited AI. Today's AI machines can replicate some specific elements of intellectual ability.

Computers can already solve problems in limited realms. The basic idea of AI problem-solving is very simple, though its execution is complicated. First, the AI robot or computer gathers facts about a situation through sensors or human input. The computer compares this information to stored data and decides what the information signifies. The computer runs through various possible actions and predicts which action will be most successful based on the collected information. Of course, the computer can only solve problems it's programmed to solve -- it doesn't have any generalized analytical ability. Chess computers are one example of this sort of machine.

Some modern robots also have the ability to learn in a limited capacity. Learning robots recognize if a certain action (moving its legs in a certain way, for instance) achieves a desired result (navigating an obstacle). The robot stores this information and attempts the successful action the next time it encounters the same situation. Again, modern computers can only do this in very limited situations. They can't absorb any sort of information like a human can. Some robots can learn by mimicking human actions. In Japan, roboticists have taught a robot to dance by demonstrating the moves themselves.

Some robots can interact socially. Kismet, a robot at M.I.T.'s Artificial Intelligence Lab, recognizes human body language and voice inflection and responds appropriately. Kismet's creators are interested in how humans and babies interact, based only on tone of speech and visual cue. This low-level interaction could be the foundation of a human-like learning system.

Kismet and other humanoid robots at the M.I.T. AI Lab operates using an unconventional control structure. Instead of directing every action using a central computer, the robots control lower-level actions with lower-level computers. The program's director, Rodney Brooks, believes this is a more accurate model of human intelligence. We do most things

automatically; we don't decide to do them at the highest level of consciousness.

The real challenge of AI is to understand how natural intelligence works. Developing AI isn't like building an artificial heart -- scientists don't have a simple, concrete model to work from.

We do know that the brain contains billions and billions of neurons, and that we think and learn by establishing electrical connections

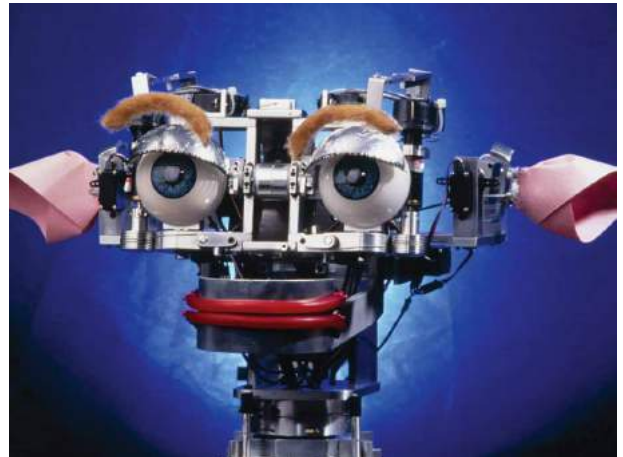
between different neurons. But we don't know exactly how all of these connections add up to higher reasoning, or even low-level operations. The complex circuitry seems incomprehensible.

Because of this, AI research is largely theoretical. Scientists hypothesize on how and why we learn and think, and they experiment with their ideas using robots. Brooks and his team focus on humanoid robots because they feel that being able to experience the world like a human is essential to developing human-like intelligence. It also makes it easier for people to interact with the robots, which potentially makes it easier for the robot to learn. Just as physical robotic design is a handy tool for understanding animal and human anatomy, AI research is useful for understanding how natural intelligence works. For some roboticists, this insight is the ultimate goal of designing robots. Others envision a world where we live side by side with intelligent machines and use a variety of lesser robots for manual labor, health care and communication. A number of robotics experts predict that robotic evolution will ultimately turn us into cyborgs -- humans integrated with machines. Conceivably, people in the future could load their minds into a sturdy robot and live for thousands of years!

In any case, robots will certainly play a larger role in our daily lives in the future. In the coming decades, robots will gradually move out of the industrial and scientific worlds and into daily life, in the same way that computers spread to the home in the 1980s.

The best way to understand robots is to look at specific designs. The links below will show you a variety of robot projects around the world.

Similar to robotics, artificial intelligence is a construct with varying definitions and potentially broad interpretations. For starters, it is useful to distinguish between general and narrow artificial intelligence (Broussard 2018). "General artificial intelligence" refers to computer software that can think and act on its own; nothing like this currently exists. "Narrow artificial intelligence" refers to computer software that relies on highly sophisticated, algorithmic techniques to find patterns in data and make predictions about the future. In this sense, the software "learns" from existing data and hence is sometimes referred to as "machine learning" but this should not be confused with actual learning. Broussard (2018) writes that "machine 'learning' is more akin to a metaphor...: it means that the machine can improve at its programmed, routine, automated tasks. It doesn't



mean that the machine acquires knowledge or wisdom or agency, despite what the term learning might imply [p. 89]."

Both artificial intelligence and robotics technologies are capable of automation. However, an open question is how and whether the effects of automation may differ across the two technologies. Some scholars contend that computerization and the increased use of artificial intelligence have the potential to automate certain non-routine tasks compared to the more rote tasks previously subjected to automation (Frey and Osborne 2017; Autor et al. 2006). Accordingly, it is possible that technologies incorporating artificial intelligence may be able to automate far more tasks than pure robotics-based technologies.

Importantly, even though a technology such as artificial intelligence or robotics may automate some of the tasks previously done by human labor, it does not necessarily imply that the human has been automated out of a job. In many cases, a computer or robot may be able to complete relatively low-value tasks, freeing up the human to focus efforts instead on high-value tasks. In this sense, artificial intelligence and robotics may augment the work done by human labor.

Robotic Process Automation

Aditi Saha

Department: Communication & Marketing

Robotic Process Automation is a technology which helps to handle the robot software in computers. According to Boulton(2018), "More CIOs are turning to an emerging technology practice called robotic process automation (RPA) to streamline enterprise operations and reduce costs. With RPA, businesses can automate mundane rules-based business processes, enabling business users to devote more time to serving customers or other higher-value work."



This technology is very handy in business and makes their work easier and sorted. This

technology reduces the percentage of error in work which helps to have a flawless report or data. "David Schatsky, a managing director at Deloitte LP, points to a bank's experience with implementing RPA, in which the bank redesigned its claims process by deploying 85 bots to run 13 processes,



handling 1.5 million requests per year. Bots are typically low-cost and easy to implement, requiring no custom software or deep systems integration."(Boulton, 2018). Many people may think that RPA is AI but actually both are different technologies and the combination of these two technologies can bring massive progress in the work field. "To build and manage an enterprise-wide RPA program, you need technology that can go far beyond simply helping you automate a single process. You require a platform that can help you create and manage a new enterprise-wide capability and help you become a fully automated enterprise™. Your RPA technology must support you end-to-end, from discovering great automation opportunities everywhere, to quickly building high-performing robots, to managing thousands of automated workflows." RPA is mainly used for least important tasks like repetitive works, keeping track of data, sorting them, finding particular information from huge data and many more things which reduces their workload and humans can focus on the important and massive works. "It enables organizations to give more and more of the mundane admin work over to machines that can handle it well and in full compliance." That is why RPA use is increasing in Business world.

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Game Review: Undertale

Tirthankar Saha

Department: Creative

In recent years, multiplayer and AAA titles are the most popular video game genres among gamers. But there are a lot of other types of games which create a permanent save file onto our memory. In this review I am going to talk about one such indie game called 'UNDERTALE'.



Overview:

Undertale is a 2D retro-looking indie game with turn-based RPG mechanics. It is a complete package of humor, thrill and adventure. In this game the player is an unknown child who fell into the underground- a mysterious location under the surface of the earth. You will meet and encounter various underground creatures and monsters throughout the game. You need to survive every creature that comes your way. But the fun part is, you can win every battle without killing a single monster in the game. The game consists of three routes i.e. pacifist- the way you play without killing a single monster, neutral- playing normally by killing a few monsters, and genocide- the way you play by killing every single monster. But that is totally up to you. The ending or consequence depends upon your choices and the way of playing.

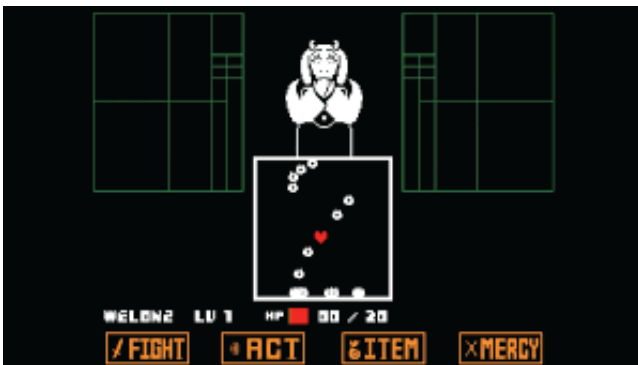


Gameplay:

The player controls the child and progresses through the game by exploring the underground world doing certain tasks or puzzles throughout the journey. Players can interact with every character. Some of the monsters want to have a fight with you which takes you into the combat screen. The battle part is ingenious and different from usual games. The combat system is turn based where the player can decide to kill, run away or befriend the enemy. To befriend, you have to interact with the enemy like petting a dog or convincing a monster not to fight. Besides that, you also have to dodge bullets or spades that the enemy fires towards you. Different characters have different unique attack patterns.

Storyline:

One of the most memorable and deep storylines in recent times hidden behind a gameplay that lacks the flashiness of most other titles. Once a war between monsters and humans took place where humans won the battle and they sealed the monsters into the underground by a magic barrier. Then many years later a human child fell into the underground and continued its journey. The story will eventually turn its way that you will never expect. The storyline changes as you make certain choices and the consequences are mind blowing.



Music and Character:

The characters are unique, quirky, interesting and memorable. Some of them are sarcastic and helpful, while others are rude and provocative. For example, Toriel wants to keep you away from other monsters whereas Undyne tries to kill you, considering you as a threat to the underground. But you will end up loving every character in the game. Furthermore, the sound effects are bizarre and the soundtrack fits in perfectly in the retro art style. One interesting thing is that the developer himself is a musician and he composed the music for the game. One of the soundtracks included in the game- 'Megalovania' is very famous because it is often used in memes.

Overall, Undertale is a spectacular indie game, with a great storyline and amazing music. It may not have been realistic graphics and visuals of modern games but the game will still manage to attract you and leave you stunned.

Tech Solution

Anindita Bose

Department: Press Release and Publicatios

"Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important." This famous quote by Bill Gates is what this world is implementing today at it's very best. Technology over the years proved to be the solution of many different problems, bringing major changes in the most extensive fields of our daily lives. Be it healthcare, food industry or communication, the branches of technology have reached everywhere. Consequently, a day without technology is like a day without breathing oxygen, i.e, we are to become lifeless without technology. Technology has its own drawbacks as well which our parents can make a list of, considering how they blame the technologies for each and every problem, and it is agreeable that teens spend way too much time on social media for which their grades are deteriorating, however, shouldn't we try looking at the other side of the coin? Not every student can excel in studies and thanks to technology we have got many social media influencers like PewDiePie, Huda Kattan, etc. Could they be what they are today if they spent hours studying forgetting what they actually excel at?

Medical Science is bringing dramatic changes in its field to be fully equipped to face the upcoming digital world. Artificial Intelligence (AI) is the new-gen techno tool that holds the key to make possible many impossibles and healthcare is no exception. A large share of healthcare executives is already applying artificial intelligence in their operations. More and more patients are nowadays inclined towards virtual healthcare, as it saves up more time, money, it allows them to get in contact with their physicians whenever they want. Then there is Nanomedicines, compared to conventional medicines, it's much better at precise targeting and delivery systems, paving the way towards combating complex conditions such as cancer. The global nanomedicine market could be worth over \$350 billion by 2025. Not only these, medical science is now using Virtual Reality (VR), which is very common for gamers, but Healthcare worker training VR can be used to train surgeons in a realistic and low-risk simulated environment. Physical and mental health VR offers therapeutic potential and rehabilitation for acute pain and anxiety disorders. VR is thus considered a cost-effective and efficient tool for both teaching and treatment. Finally, the introduction of Robot-Assisted Surgery is sweeping through hospitals. It allows doctors to perform delicate and complex procedures that might be otherwise impossible.

Due to this, the surgeries are carried out with more precision, flexibility, and control. It comes with fewer complications such as infections and so it results in less obvious scars as it is minimally invasive. The intervention of technology in medical Science proved to be quite fruitful for Medical Science.

In addition to this, Technology has been a real saviour in the food industry as well. Machines and robots are being introduced to factories, farming, which in return decreased the cost of keeping food fresh and increased productivity. Not only this, using technology in food industries eliminates any possible risks for human as the robots are now assigned for such works. In 2016, a tech company rolled out a program for butchery. By using robots to cut the more difficult of the meats, they can save many work injuries. One very interesting invention, that might open many new opportunities in the future is the usage of 3D printing to create soft foods, of which NASA recently showed a demo. There are many ways the food industry is shaking up the world. Furthermore, the major concern of our world is how to dispose of waste by not polluting the environment, but thanks to technology we will finally be able to go green. How is that happening? Well, by using robotics and digitizing, companies in the food industry are able to find alternatives to plastics and another harmful packaging to the environment.

To conclude with, Technology comes with such a vast power in its hands that might easily be misused. Many crimes are happening these days that somehow or the other were related to technology, like hacking bank accounts, cyber harassment, etc, technology made things easier for the criminals as well. However, a new door always opens when the other ones close, tracking the criminals are also easier now thanks to GPS, which also is a gift from technology. Therefore, it is our duty to use and make others use the benefits of technology positively because this is the least what we can do after all the things technology has offered us.

Reference

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The hell of learning to code. Tutorial hell

Mahdi Islam Pranto

Department: Press Release and Publications

Let's be honest. If you are a complete beginner and want to learn to code, it can be a programming language or a framework, what would you do first? Alright, let me share my experience.

My Experience as a beginner

When I first started learning how to code I wasn't understanding where to start properly. So, I started searching on Youtube, and then I started watching tutorials about Html, CSS, and Javascript. The tutorials had some projects also. I learned how to build awesome landing pages with cool animations. After watching tutorials after tutorials I was feeling that I became good at this. Now I was interested in building something on my own. But when I start building my own project, I was drawing a complete blank. I had no clue how to get started and how to put all the things together. Honestly, I wasn't able to build something of my own. So, what was the problem? The problem was I became too dependent on those tutorials and eventually, I was falling into tutorial hell.

I think we all somehow do this as a beginner. We usually don't know the proper way to learn to code as a beginner. We become too dependent on tutorials without having a plan. We continuously watch tutorials after tutorials and we get trapped into tutorial hell.

How to escape from tutorial hell and the best way of learning to code

Tutorials can be a good learning resource but at a certain time, you have to take your hands off from this. What I'm saying is tutorials are good just for the basics done but don't fall into that rabbit hole of just doing tutorials because you feel like you're not good enough to start your own projects. Now you may say, Ok but what should I do? So let me tell you what you should do.

1.First, make a plan of what you want to do or what you want to build. I'm talking about projects or a problem you want to solve. Don't just dive straight into tutorial videos. Thinking about the problem first and then worrying about the implementation is a key part of being a developer.

2. We need to do some basics first. Let's assume you want to build a To-do list app with javascript. Then you need to know some basics of javascript. Just go to w3school or some easy documentation and learn some basics there. You also can see tutorial videos just to get the basics done, nothing more than that.

3. After you get the basics just take a deep breath and jump into your project or problem. When you start building out the things that you want you can pretty much break them down into small pieces and then you can identify, well I know how to set up the basic project but how do I do this thing? Then you can start googling things, how to do that specific thing using that specific technology. Once you google that thing you're like oh okay so that's it let me put it on my project. You will be stuck and that's normal. Don't be scared. Everyone faces this. Remember Google is your best friend. Make a habit of googling. It is fine if your code is not 100% correct. The goal is to begin learning how to research and think about the problem.

4. If you feel you need to watch tutorials of someone else's project before starting your own, it's fine but you need to do this in the right way. Don't just follow what the instructor doing, rather learn the concepts of how he doing things. After watching all the videos, take the final project and rebuild it. Don't just duplicate it. Break the code and make things different on your own. If you get stuck don't think you can't do it. Do googling, research and, research. You will find your solution.

5. Then researching after researching you'll learn lots of things and most importantly you will understand and find the best way of your learning. Once you grab this skill of learning of your own and boom!! Now you can learn any programming language or any framework or pretty much anything on your own.

And that's it. To sum up, what I'm trying to say is don't fall into the tutorial hell. Don't be that monkey who just follows other people. Think on your own and make things on your own. That's what good developers do. Don't be scared to do this jump. I know it's scary, I know you are a beginner but trust me you can do it. Happy coding!

MINECRAFT

Anindo Masiat

Department: Press Release and Publications

If you didn't live under a rock for the past 10 years, you would be quite familiar with the name Minecraft. It has been an internet sensation from 2009, spawning countless memes and YouTube videos. Minecraft is a blocky retro game that would make anyone think that it is some kind of Chinese bootleg of another game. But sure, Minecraft is something the world hasn't seen before. Today's kids cry over getting



sniped at Fortnite, but real men cried when they found a diamond block in Minecraft

and suddenly there's a creeper behind them. Minecraft is a blank universe of blocks that lets you create whatever you want wherever you want. Bewary of the night, for creatures lurk. There are no limits to what you can do, no place you can't build. The first time I tried Minecraft I played only for 5 minutes and deleted it. Not recently Minecraft announced ray tracing and better textures and I thought giving it another shot after 10 years. If you like sandbox games and love making things you would definitely enjoy Minecraft. It won Game of the year 2010.



No other game can unleash the hidden creativity of a person the way Minecraft can. People like me spend 100 hours on competitive games likes Overwatch but still play Minecraft to ease their mind. Chopping wood, making house, creating out of the world structures are a few things among thousands of others. One thing is assured you won't ever be bored of playing Minecraft once you understand the core mechanics of the game. Now enough praise has been given. Let's dive deep into the world of Minecraft. You can play both offline an online multiplayer in this game. You start in a random blocky world with random terrain and resources. You have to survive by building a shelter and harvesting food.



At the basic level you have to harvest everything by hand. Once you have enough material you make a crafting table and craft things out of different materials. There are animal companions in Minecraft but if anyone kills your dog you can go full John Wick with a diamond sword. Creepers are the iconic, green, cactus-like Minecraft enemies that populate fan art all over the internet.

Harvesting, building, crafting these three words can pretty much sum up Minecraft. If you want to try this game you can find it on almost all digital platform. It's a paid game. But I would recommend if you can, try the ray traced Minecraft on PC. Finally, I would say Minecraft is a game for all ages. There is no nudity, guns, violence. Just pure fun and entertainment.



Name: Minecraft

Initial release date: May 17, 2009

Composer: Daniel Rosenfeld

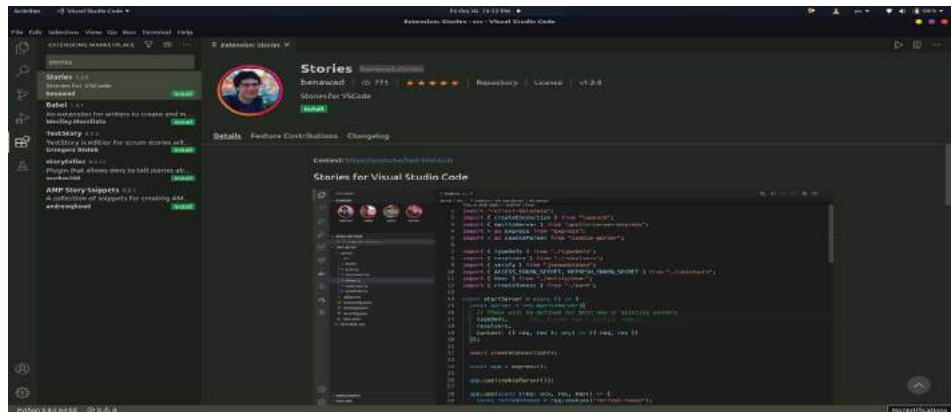
Composer: Daniel Rosenfeld

Founder: Markus Persson

Developers: Mojang, Markus Persson, 4J Studios, Other Ocean Interactive, Xbox Game Studios

See "Stories" now on your favorite Code Editor

Showmick Kar
Department: Press Release and Publications



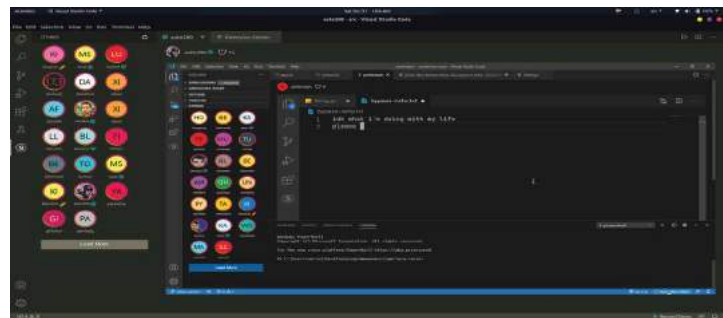
Apparently, your friend is single. So she goes on Instagram, sees other single people's sad stories(like me), and realizes she is not alone in this cruel world. GREAT!

The only problem is, you are a programmer. You don't mind being single. But what you do mind is spending hours upon hours staring blindly at your computer screen having no idea what is causing that wicked bug and feeling like you are the loneliest wolf in the world.

So, is there a solution to that?

No...

.... Yet!



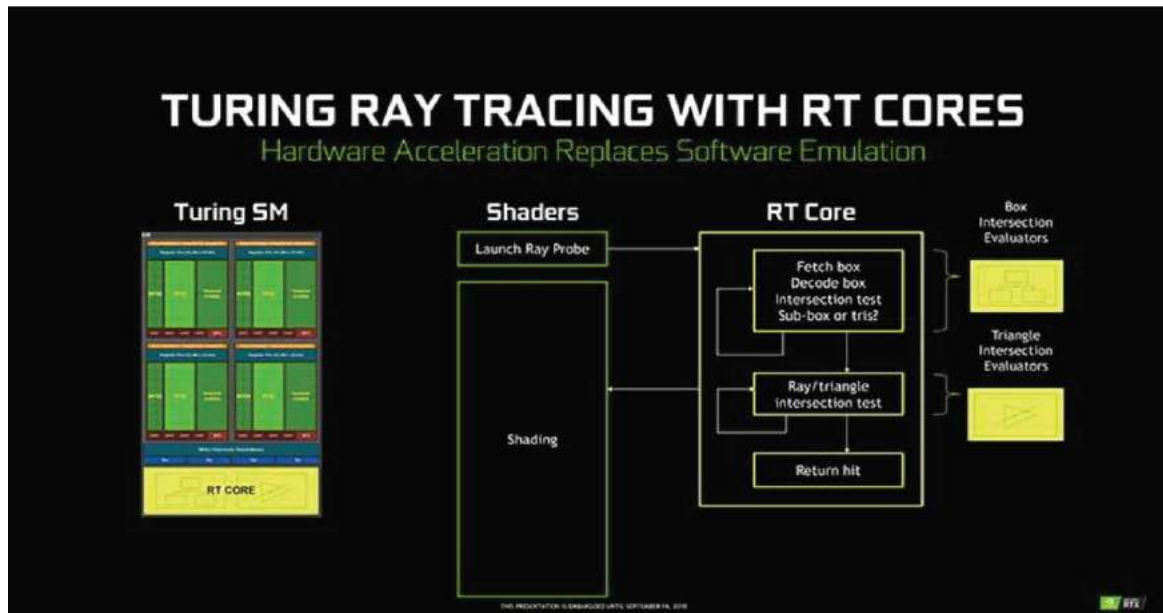
Introducing the newest extension on everyone's favorite code editor Visual Studio Code. Here you can see what developers from around the world are working on. You can react to their stories. Not only that, you can actually record your editor screen for up to 30 seconds and share your own stories with the rest of the world. All you have to do is to go to VS Code extensions, search "stories" and install it.

So? What are you waiting for? Don't you want to know, you are not the only frustrated programmer who can't even get their "Hello World" program right because of a missing semicolon?

RTX & Ampere Architecture: A New Leap in Gaming

Kazi Shahed Mamun
Department: Creative

In September 20, 2018 Nvidia first introduced their latest line up of GPU's that has real time ray tracing feature or the RTX feature. Immediately the gaming community became hyped for those next generational graphic cards. But do we really know what RTX is? And what does the latest architecture has to offer on subject of the previous one? Let's find out!



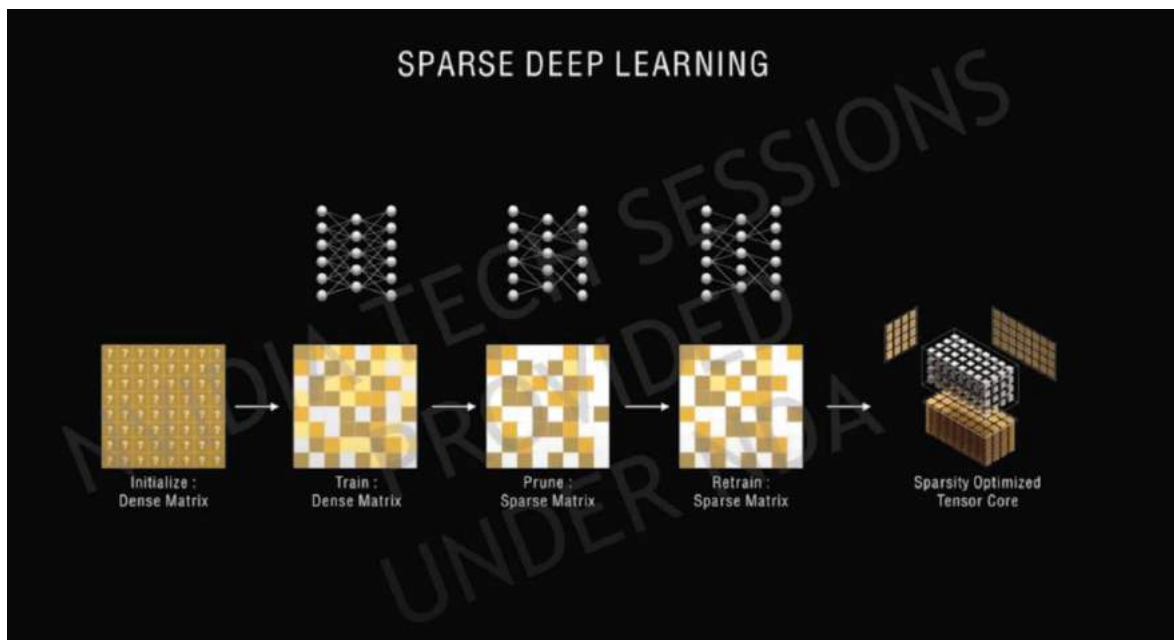
What is RTX?

Remember that one chapter from class 6 science book that we loved at that time? Yap, you guessed it, the chapter of "Light". From there we know that we see an object because the light from the eyes goes and reflects the light from the actual object and falls on our eyes. The ever known theory of "The Reflection of Light". This is the basic concept of RTX. RTX or Ray Tracing X is mainly a high-end graphics rendering development platform created by Nvidia, primarily aimed at enabling real time ray tracing in the genre of games.

In a game, the game play illuminations are created by using Rasterization, a method that shows a light or a shadow from the source file to the 2D image. But in RTX, it actually tracks the ray of light and bounces the light back like a realistic scenario which makes a games' visual experience hyper realistic. It also makes the reflections more clear and creates a shadow that responds to the light source properly. RTX is not a new word that

came out of nowhere. Actually, the movie makers, especially animation movie companies like PIXAR, Disney are using this ray tracing method for many years now. But the fact is, they need a super computer to process such a high demand work. Then how are we supposed to play the games that have RTX in it? We can't just buy a super computer right? That's where Nvidia comes in. They made an architecture line for their RTX series GPU's which is called "Turing Architecture". This Turing Architecture has consumer level RT cores & Tensor cores which help to solve the problems of Artificial Intelligence and deep learning mathematics. Thus these kinds of graphic processing units have the ability to give us a realistic experience with the RTX feature enabled.

As of this day, Nvidia has made two generations or series of graphics cards that has the RTX feature. The Turing 2000 Series RTX graphics cards & the Ampere 3000 Series Graphics cards.



Comparison, Discussion & Architecture: Turing vs Ampere

As mentioned earlier, Nvidia first introduced their RT cores in their Turing line-up of chipsets. But their latest Ampere line-up of chipsets has 2nd gen RT cores and 3rd gen Tensor cores. If we look closely we can see that the Ampere architecture has changed their layout of a single core as well as increased the total amount of working cores. Turing series had 64 FP32 CUDA cores whereas Ampere series has 128 FP2 CUDA cores which is more than double in the latest line-up.

The Ampere series graphics cards are using the 2nd gen RT cores. The functions of this are as same as the previous RT cores but this time there was a new component added. It is called "Motion Blur Acceleration" which helps to ray trace a moving object which was previously absent. This will give us accurate results of Ray Intersection and Ray positioning.

Now let's talk about the 3rd gen Tensor cores. Previously, there were 8 tensor cores used in 1 SM (Simultaneous Multiprocessor) whereas this time in Ampere architecture, there are only 4 tensor cores are being used which is half than the previous line-up. But there is nothing to worry about as performance has upgraded significantly. It has borrowed the sparse deep learning method from A100 GPU accelerator. This significantly reduces the matrix size, thereby speeding up the time needed to resolve it. Despite packing half as many Tensor cores, an RTX 3080 featuring the 3rd Gen Tensor cores is twice times as fast compared to Turing in mixed-precision FP16 compute. Without the use of sparse matrices, the Tensor performance is unchanged.



It's also notable to note that every SM partition can run the RT, Tensor, and FP32/INT32 workloads in parallel, given you have ample register/cache bandwidth available. Turing was limited to parallel FP32+INT32+RT/Tensor pipelines. The concurrent RT and Tensor pipelines help reduce the render time of a frame with ray-tracing and DLSS by 0.8 ms. Overall, including the improved FP32 performance, the time is cut by nearly half: 13ms to 6.7ms.

Day-by-day our technology is upgrading dramatically. It will open a huge opportunity for game development and adding new features that will make our gaming experience more naturalistic. And this, my friends, is just the beginning.

Sources: PC builders Bangladesh YouTube, Jayz Two Cents, Linus Tech Tips, www.hardwiretimes.com
 Pictures: Nvidia Tech Session

Revisit your childhood with TIC-TAC-TOE!

Showmick Kar

Department: Press Release and Publications

Remember the game you played on pen and paper with your friends so much back in your school days which you never thought you would ever play again after graduating from childhood? Yeah, I'm talking about Tic-Tac-Toe! If you haven't heard of it, you should probably ask your grandkid. He will tell you how sweet the game is!

What you didn't know is that Tic-Tac-Toe is not only a fun and silly activity to pass your time as a kid, but it's also a cool game to build with code which you can make in literally just a day if you have some basic programming knowledge. Making a Tic-Tac-Toe game is a great way to jumpstart your programming journey and improve your skill.

Now comes the fun part. Back in kindergarten, you must have had this one friend, who always outsmarted you in every single game that you played with him. He always made such clever moves leaving you in a situation where no matter which move you make next, losing the game was inevitable. Sounds familiar?

But, I'm not trying to rub salt into your wounds! I am here to avenge your loss!

Head over to google. Type "Minimax Algorithm". Read a few articles on it. Maybe it's worthwhile to watch some explanation on youtube if you are having a hard time understanding. Then, Code the algorithm in your programming language of choice. Add it to your game. And VOILA! You just had your first experience with Artificial Intelligence!

Even a grandmaster of Tic-Tac-Toe cannot beat you and your game now. It's your time for you to show your friend, who is smarter. Also, it will be a fun experience to reminiscence your childhood memories.

By the way, if you have read so far and actually tried to code your own Tic-Tac-Toe game but got stuck, I have made the game a few months earlier in python. The code for this game is uploaded on Github. Feel free to refer to my code if you need help. Here's the Github link:

["https://github.com/ShowmickKar/TIC-TAC-TOE-AI-with-Minimax-Algorithm"](https://github.com/ShowmickKar/TIC-TAC-TOE-AI-with-Minimax-Algorithm)

Happy Coding!

The Winner of Hearts: Call of Duty Mobile

Taimoor Fahim

Department: Event Management



Do you know which is the best first person shooting game for mobile? The answer will be Call of Duty Mobile. This game is a free to play shooter video game which was developed by TiMi Studios and published by Activision for Android and iOS. It was released on October 1, 2019. There is also PUBG for mobile which is similar to Call of Duty and it has been around over a year before CODM was released. So what makes Call of Duty Mobile special? Though the game play is similar to PUBG Mobile but faster, smoother and it gives you a feel of Modern Warfare. Having a rich history of Call of Duty franchise, "Call of Duty Mobile" gained popularity in a very short time. It generated over US\$480 million in a year. It generated over US\$480 million in a year.

One of the biggest Pros of Call of Duty is that the graphics of this game are stunning. It is almost realistic. This allows console-like pictures with over 30 frames per second. Graphic settings can also be further customized in-game to raise and lower visual quality and frame rate to get smoother gameplay. Also, there are two types of game modes. One is Battle royal, and another one is multiplayer. Multiplayer is only limited to the first person, but in Battle Royal, a person can switch between first and third-person gameplay for a unique experience. There was also a third zombie mode that removed previously, but it could be added again in the future. This variance helps players to have a unique gaming experience. Though at first glance, the fighting style looks similar to PUBG mobile, there is a vast difference. It can only be understood by playing this game. Furthermore, in CODM, there is zero-tolerance for These helps to make this game fairer for everyone.



Next, this game can run on Android devices with at least 2GB of RAM and Android 5.1 and above. These means, this can be run on almost every phone which has Android 5.1. For iOS devices, it will run on iOS 9.0 or higher. Because of this, many players get the opportunity to play this game.

Now, Call of Duty Mobile has been around for over a year. Yet, it has a huge future ahead. It is because of the world tournament championship 2020. With this tournament, Call of duty has entered e-sports. The winner will get up to US\$1 MILLION. 7 teams were



selected as finalists from the seven regions of the world. But sadly, it was canceled because of the covid-19 breakout. Even though this was the only official tournament by CODM, we can always find unofficial tournaments happening around us. For example, two months ago, I participated in an unofficial Solo Battle Royal tournament, and luckily I won the game. The prize pool was two thousand takas, which not that much, but winning something has its unique feeling. So, for the new players, there are enormous opportunities for them to participate in different tournaments.

Although the game gives us a great gaming experience, it still has flaws. For instance, the connection sometimes drops that leads to high ping. Because of that, it gets harder to play with high ping. Also, unlike PUBG, Call of Duty mobile does not have enough maps, which becomes boring for some players. On the other hand, in CODM, no player can use any third party or external device. Although some players think this is unfair as many people cannot play without them, this makes the game fairer for everybody.

In conclusion, Call of Duty is still developing every day. There are still many bugs in the game. But this does not stop the game from giving us the excellent experience we want. As for now, the way the game is developing; it will become huge in Mobile gaming platforms in upcoming years. This game has won hearts of the mobile gaming player throughout the world with their game plays. The new players who will start playing this game; remember at first, it won't be obvious, but slowly you will begin to like it. An interesting

Referevnce:

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- Sarkar, D. (October 12, 2019) Call of Duty Mobile review: Offers faster game play with less talking and more shooting.

Technology that makes visuals more appealing - Anti-Aliasing

Navid Morshed

Department: Press Release and Publications

Who doesn't like playing video games? The graphics, the gameplay, lore/story all of it blent together procures an wonderful experience. A good game requires decent graphics as much as it's story elements and gameplay. There are loads of technologies that make beautiful texture or enhances them and anti-aliasing is one of the most important one of those. While playing games I have found that, tweaking setting and check the outcomes in texture is a favourite thing of mine to do. Here in this writing I plan to talk about some techniques regarding anti-aliasing that are associated with most games of the past decade or so.

What anti-aliasing basically does is smoothen the edges of a texture. It is mostly a post processing technique, means it is done after a texture loads in a video game. A simple yet important question might arise. Why do this after? why not load it smooth and crisp altogether? This is because, as much the graphics processing units (GPU in short) are powerful in this generation, they are not significant to process high quality texture in a video game. It might surprise people but, playing games at 4k HD resolution at 60 Frames-Per-Second is still a thing of the future. It is possible however not affordable for the majority. This is why games must be optimized. Developers always try to find new ways to optimize their game engine so they can provide better graphics also at a tolerable framerate. This is whre anti-aliasing comes in. It reduces computational cost which can be a lot in processing 3D textures. When computational cost and memory intensity is reduced even a low-medium budget computer can provide pleasing texture in a smooth manner. Some of the most used anti-aliasing techniques are FXAA, MSAA, TXAA, SSAA. I'll talk about all of these technologies and fret not, I shall try my utmost not to turn it into a boring abstract kind of writing.

Fast approximate anti-aliasing (FXAA) is one of the most popular aa technique. It requires low computational power, a technique developed by Timothy Lottes who has been working very long as an engineer at NVIDIA. This is also known as fast sampling anti-aliasing(F-SAA). Rather than analyzing a 3D model, FXAA reduces screen or texture jagginess by dealing with pixels. FXAA is better than some anti-aliasing as it can deal with alpha-blended textures or those that results from pixel-shader effects.

Super Sampling anti-aliasing(SSAA) is the most efficient yet the most demanding kind of aa tech. What it does is, it renders a image at a very high resolution(ex 3840x2160) rather than it's original one. Then it downsamples it into user's display resolution. This way it creates a crisp texture with smooth edges rather than looking pixelated.

MSAA stands for Multi-Sampling Anti-Aliasing. MSAA is a very common type of anti-aliasing that balances between performance and texture quality. It selectively uses SSAA technique to texture edges during a render cycle. It takes multiple samples like 2, 4, 8 etc to process higher quality images. More sample counts mean higher quality image and texture quality but at the expense of computational power.

Temporal anti-aliasing (TXAA) developed by NVIDIA is an amazing technology that provides highest quality anti-aliasing. The cost is performance. Other aa techniques can't fix flickering while in motion in a video game. TXAA solves this by using high quality anti-aliasing then uses post processing afterwards. This happens at the cost of some framerate. Only NVIDIA made graphics cards can provide TXAA and only games that support TXAA can make use of this technique.

These are the fundamental anti-aliasing techniques that are used in all video games. Most video games provide multiple kinds of aa technique so that players can choose according to their hardware and have a great experience. Reading this, perhaps can help you have a better experience in your gametime.

HOLOPORTATION BY MICROSOFT

Saiara Zerine Nibras

Department: Event Management

"Nobody understands how the world will change. The only way you can plan for the future is to have scenarios. You have to have the courage to take a leap of faith on one of them" – Anand Mahindra. Prediction is a safety net. Being able to get up from one's bed and to make the assumption that today will be a great day, tomorrow an even better one is a hidden comfort that we humans have to offer ourselves. Change is the only constant. The world and this life has been all about changes and finding ourselves in an ever going treadmill to catch up to these changes. Embodying this concept we make stunning discoveries in the technology world. As time goes, technology has been a shape-shifter. Once a wheel which was considered as one of the first few technology invented by us humans, we have now travelled to the moon and back, floated on space, seen Mars without even having to be there and we still haven't stopped. Development in the technology world has been relentless. So are the people behind these mind-boggling inventions and innovations.

Technology has seen pioneering discoveries, inventions and innovations. One such invention is the HoloPortation by Microsoft. What is HoloPortation? It is a new communication technique that allows you to interact with another person through real time; computer generated 3D projection of the person at your home or workspace. Not only can you hear them and see them but you can 'feel' their presence. Their avatar will look just like them, wearing the same clothes and hair as them in real time. HoloPortation is about you getting to 'feel' what you see and hear. Pretty exciting!



Now, the curious mind asks, how is this possible? It is needless to say that developments in the world of technology still find ways to leave us in awe. As various technologies improved parallel Microsoft has finally been able to assemble them to create HoloPortation. Here is how HoloPortation works. Let us look at a scenario. You are here in Bangladesh and your best friend is continents away. You really miss your best friend and want to meet him or her. This is where HoloPortation comes in. In a designated space, surrounded by several podiums, special cameras have been set. You wear a VR set, turn the system on. So does your best friend. Voila! Both of you are in the same room now even if one of you is miles apart. To be slightly precise, the cameras capture your depth, the uses an algorithm to capture your depth, render an image from that, stitch all the frames into a video and stream it at the other user's end. Pretty simple and smart. But if we were to get technical, here is what really happens.

The first step is creating depths. The system uses the assembly of two IR cameras, one structured light projector that has been calibrated and rectified to the IR and RGB colour cameras for texturing, at each of the podiums. The IR cameras project thousands of dots on to a person which act as reference pattern for each image frames when forming the final data for live streaming. This method allows depth recognition. But the initial images formed here are still gritty and so they are smoothed bilaterally. But this is still not enough for achieving a temporal consistency. This is the second step. The data points or dots are used to create a deformation graph. A deformation graph is a graph built from

the transformation of a body from its reference configuration to the current configuration. This is followed by some warping and fusion of data. As for the third step, these data are then fed to a computer at the user's end where images are rendered. Then the rendered data is sent to a HoloLens, which is simply a VR set. Amazingly, you can see your best friend now, right in your living room.

HoloPortation does still have challenges to overcome. One of the biggest problems is its infrastructure. It still requires too many cameras and podiums and is not an untethered experience. Even though this technology allows you to 'feel' what you see and hear it still hasn't completely closed the gap between what's real and what's not. It has some big compression hurdles to deal with. The system uses huge amounts of data and can require compression of data up to 30 GB/s to 1 GB/s. This is not enough to produce a high quality transmission.



Holoportation is a machine with purpose. With time it will get better. Most importantly it will find uses in various courses of our daily activities. Few such instances that can make use of this exciting new technology include telecommunication, project showcasing for different designing firms, law enforcement, capturing memories in a new way instead of photographs and videos, gaming and spending time with loved ones continents away. Although it requires more development, this has been a huge leap by Microsoft, a company that has had major impacts in our digital life. As the remarkable Einstein said our past, present and future will become a persistent illusion. Telecommunication by a form of teleportation is finally here. So is a new era.

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["https://www.youtube.com/watch?v=7d5906cfaM0"](https://www.youtube.com/watch?v=7d5906cfaM0)

My Review Of The SIMS 4

Name: Tasmia Azrine

Department: Event Management

Looking for a highly rated video game to play?

When I got an excellent game for you, you should quit worrying. You can go and play the sims 4 expansion pack right now, even though you've played it already. I give five stars to this game because it is a wonderful game. The Sims 4 is a video simulation game developed and released in Electronic Arts in the Redwood Shores studio of Maxis in 2014. It was initially released on 6 May 2013 and is the fourth main title in The Sims series. On 2 September 2014, it was released for Microsoft Windows in North America. The game was released on 17 February 2015 as a Mac-compatible version. In two years, Sims 4 is the first all-format PC game to be played. After its publication, the game has been given mixed feedback, most of which criticized its Inhalt. Ten packs of expansion were released. The latest was released on 13 November 2020 by Snowy Escape.

In addition, eighteen stuff packs, nine-game packs, and upgrades included more considerable improvements such as the addition of a toddler life stage for this generation have been released. However, it gives us not only entertainment but also helps us in our studies. This allows us to extend our wording and simultaneously gives us architectural and designing knowledge. It is a sort of game in which we can build anything with our imagination. This also strengthens our fantasy and innovation. The life we have all dreamed of is a convenient game. We can have our own job, open a company too, or have some part-time jobs to do. Volunteer work is a choice, too. I will say in this game that The Stuff in The Sims 4 is essential. I won't often encourage anybody to spend money on micro-purchases or on DLC. If you just



have a limited sum of capital for original sales or vacations on occasions, it's worth taking in a couple of packages, particularly the basic game too often reduced to less than \$52.34. It is more amusing to let my sim sleep on the floor of a karaoke bar as well as I do in my Sims 4 counterpart. Especially during the date, the sim was gone to sleep on the floor. Sleep is the only thing I enjoy despite the unrealized aspect of dating. But the more stuff you have, the harder your Sims can be managed. You can even play the guitar or paint a painting, mix drinks in your mini-bar or spend a couple of hours watching the telescope. I have always found it funny when many Sims do not give the chance to talk because they are sleepy or go to another SIMS house and make dinner.

The last major expansion was Island Living, a pack that helps us either visit the tropical paradise of Sulani or build a house there and move in. This has done more to boost the pace and feature of The Sims 4 than all the others, along with the City Living and Discover University packs. You're free to swim with dolphins, meet sirens in Island Living, open the beach bar and enjoy the dreams that make up your generation. You can experience new wonders in the university at Discover University, while the City Living pack transforms the Sims 4 into another version of your favourite 30 sitcoms. Ultimately, The Sims 4 presents



me with a new perspective. My regular games are far darker and more brutal, and the bulk of colourful outlets and family names have always put me off. I can just float in and around the Sims 4 and hope between residences and places as the mood takes me. It might not be recent; however, Sims 4 is undoubtedly alive and kicking in 2021, and once you have greens to spend in at least one of the larger DLC bundles, or even the game bundles with actual campaigns and goals, there's

enough material to hold you up for a few more years creating, purchasing and living vicariously.

Consequently, I highly recommended this game to play or at least try it for once. I am damn sure you guys will have a perfect time.

SIMULATOR

Name: Ahnaf Rahman Khan

Department: Event Management

Bangladesh has become a developing country. It has developed very much in past 10-12 years and that is why people call it "DIGITAL BANGLADESH". Here not only the people but also the technologies have developed. Though technologies have developed, there are some few things which have not been introduced properly. For example: now-a-days here we see some new technology which is called the SIMULATOR. Simulator is very much enjoyable for everyone, especially the kids because it is basically used in only game sectors in Bangladesh but it has a lot of use if we look deeply. In many countries it has been introduced in many sectors especially in the training sectors but in Bangladesh it has not

been introduced for that criteria. If we look at the other countries, we will see that they are using the simulator in many forms of training like- driving, healthcare, engineering etc. As Bangladesh is developing day by day, It should focus on the technology side because no country cannot develop if the country is analog. So Bangladesh should also introduce the simulator in all the sector it can be used in. If a simulator is introduced at

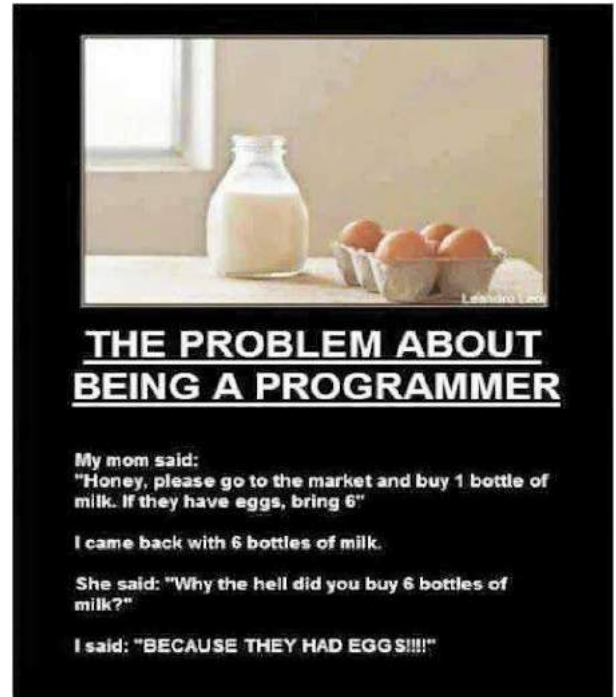
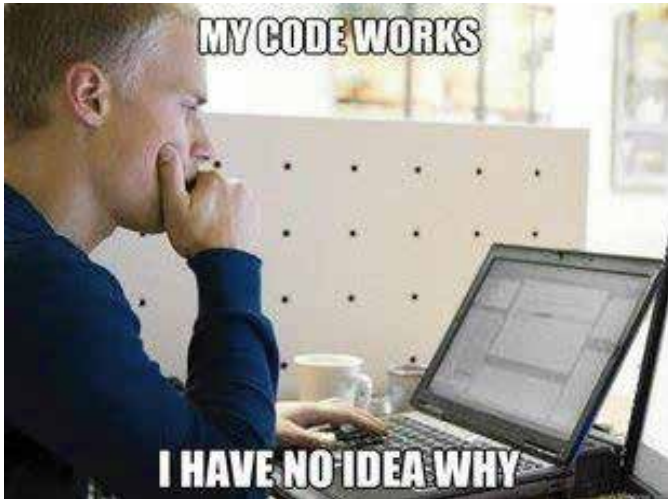


least for training it would be much helpful for the people to learn and train properly. For example- sometimes we see some old rusted vehicles which have a signboard "CAR DRIVE LEARNING" or similar to this written on it. It is not safe for the people of Bangladesh where the roads are very busy and dangerous. So for these road the old rusted cars are not the proper way to learn driving. If we use simulator in this case it will be proper and easy for the learner because simulator gives a real life experience without any danger. Moreover, if we look at the medical side, there are many intern doctors who are not that experience to do a major operation. Besides it take a long time for them to gain that experience. In this case if we use simulator, the intern doctors will be able to try the experience and it will not take that much time. Also, it will be easy to learn and less dangerous. Similarly, the engineers and scientists should use the simulator to test their tests. There are many more benefits of using the simulator in the training sectors. Firstly, with training simulators, employees can feedback about their efficacy and use of the platform, equipment, or guidelines. People can know about the mastery about themselves on that training and gain new skills every session. So after all these I think our country has many more options that can help our country to develop in the technical side and if our country is technically developed then this will be known as a developed country this world.

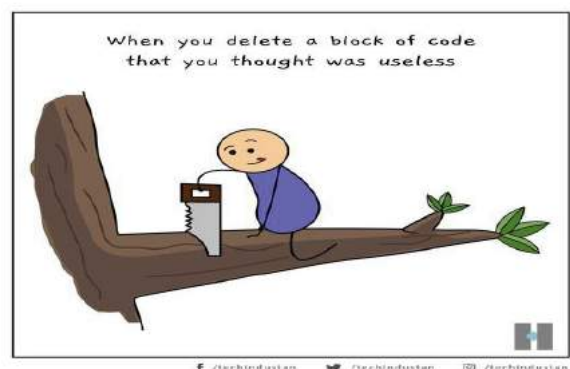
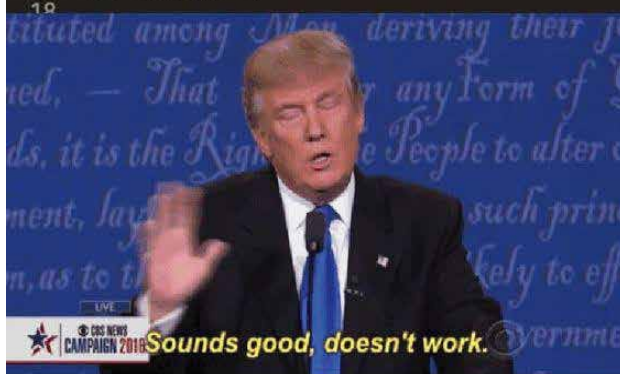
Tech Jokes

Name: Farah Jasmin Khan

Department: Human Resource



3
4 Machine,
5
6 Pls make website,
7
8 all responsive like,
9 w/ BIG pictures ooo,
10 use my fav fonts,
11 also fancy menus with whooosh on,
12 load fast pls
13
14 Thanks,
15 Human
16
17 PS no bugs :)
18



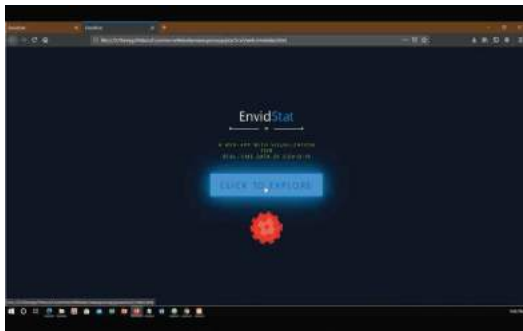
1	9	6	7	3	5	2	8	4
7	4	5	2	8	1	3	9	6
8	3	2	4	6	9	1	5	7
2	5	7	6	9	4	8	3	1
9	8	4	5	1	3	6	7	2
6	1	3	8	7	2	5	4	9
4	2	9	1	5	8	7	6	3
3	7	8	9	2	6	4	1	5
5	6	1	3	4	7	9	2	8

Answer for the Sudoku in Page: 48

6	4	3	8	7	5	1	2	9
8	1	5	9	2	6	3	4	7
2	7	9	1	4	3	6	5	8
7	6	4	2	9	8	5	1	3
3	9	8	4	5	1	2	7	6
1	5	2	6	3	7	8	9	4
9	8	6	7	1	2	4	3	5
5	2	7	3	8	4	9	6	1
4	3	1	5	6	9	7	8	2

Answer for the Sudoku in Page: 48

BUCC Success Stories



BRACUDuronto's EnvidStat Finds Success at NASA Space App Challenge

BRACUDuronto became one of the top 45 teams (out of 1,300+ projects by 15,000 participants) during NASA Space App Challenge 2020. BRACUDuronto was comprised of Abrar Shahriar Abeed, Md.Rawha Milkdad, Shanjida Habib Shormi, Nafis Mostafa, Mohammad Adnan Hossain, and Syed Mishar Newaz, many of whom are part of the EB Panel of BUCC.

Success at UITS Inter Private University Programming Contest 2019

In the UITS Inter Private University Programming Contest 2019, an all female team comprised of BUCC Members won the title of Best Female team.



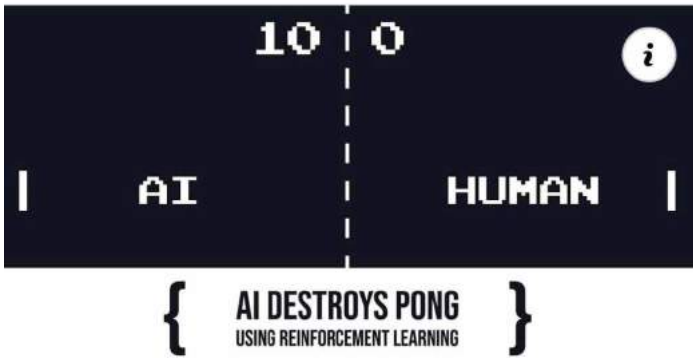
BRACU Team Become Semi-Finalist Robotics Reality show - Esho Robot Banai

This is Bangladesh's first-ever Robotics Reality show. A. E. M Ridwan, Former Assistant Director, Human Resource, participated in the show and worked on 3 robots to reach semi's.

BUCC Member Becomes 3rd Place Holder in the Programming Contest of IAIT Presents Technophilia 1.0

BUCC Creative department member Nayeem Rafsan became 3rd place holder in this programming contest.

Rank	Team	Score	Penalty	A	B	C	D	E	F	G	H	I	J
1	Apollon (India)	2	100	00:43	02:18	00:20	00:18	00:19	00:20	00:20	00:20	00:20	00:20
2	emulque (IT)	8	180	00:10	00:10	00:10	00:10	00:10	00:10	00:10	00:10	00:10	00:10
3	UCC@I	1	200	00:10	00:10	00:10	00:10	00:10	00:10	00:10	00:10	00:10	00:10
4	Shadab (UCC@I, IAIT)	4	200	00:20	00:20	00:20	00:20	00:20	00:20	00:20	00:20	00:20	00:20
5	Techno (India)	3	100	00:20	00:20	00:20	00:20	00:20	00:20	00:20	00:20	00:20	00:20
6	Subhanshu (India)	7	170	00:40	00:40	00:40	00:40	00:40	00:40	00:40	00:40	00:40	00:40
7	Ashraf (India)	3	180	00:40	00:40	00:40	00:40	00:40	00:40	00:40	00:40	00:40	00:40

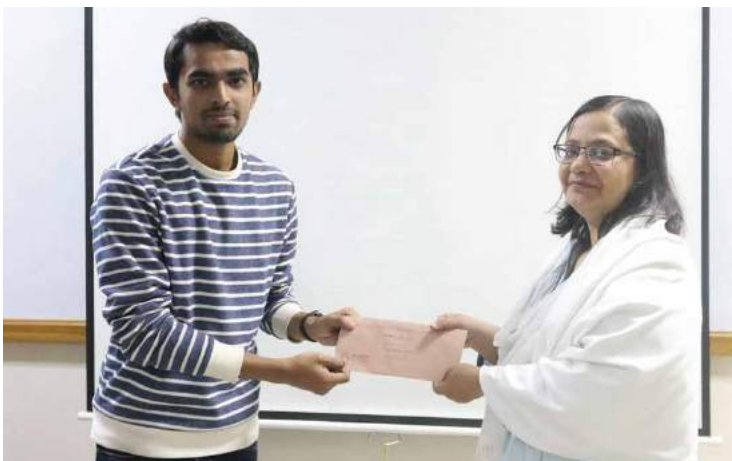
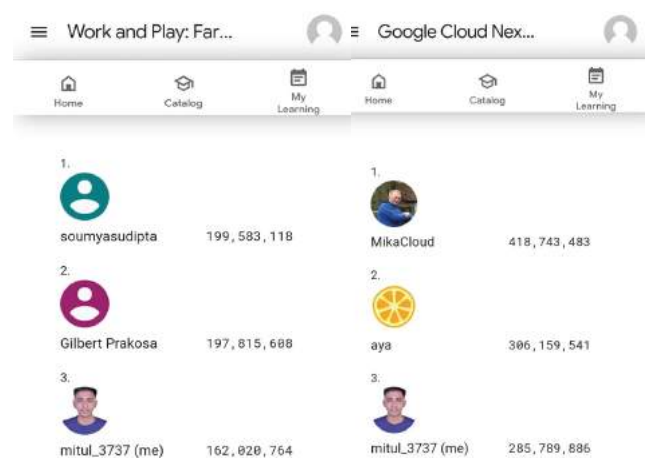


BUCC PR Department Member Creates AI That Learns Pong Through Self-play

BUCC PR department member Md. Muhtadee Faiaz Khan Soumik created an AI for the Skill Showcase segment of BUCC R@DIX and became one of the best top projects.

BUCC HR Member Places in Top 3 Twice in Google Cloud Qwiklabs Challenges

BUCC HR Member Md Shahriyar Al Mustakim Mitul Placed 3rd on two separate occasions in Google Cloud Qwiklabs Challenge.

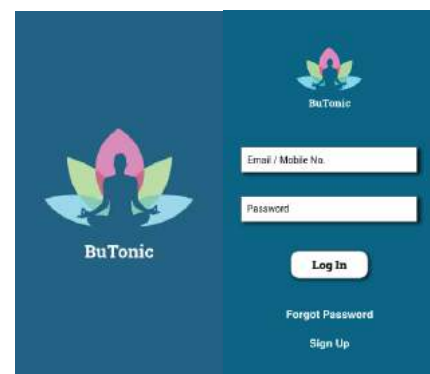


Former AD of BUCC PR Held Third Place in Intra-University Programming Contest Fall-19

Niloy Deb Roy Mishu, former Assistant Director, Press Release and Publications, stood Third Place (Senior Team) in BRAC University Intra-University Programming Contest Fall-19.

BUCC Members Develop an App That Connects People Seeking Help to Psychiatrists

BUCC Member Nafim Ahmed and his teammates developed an app that connects people seeking help regarding their mental health directly to psychiatrists.



In This Month:

Deadline	Course	Assessment Type	Assessment Name
Jun 19, 2021 17:59 GMT	EEE203	Quiz	Video Lecture segments
Jun 22, 2021 17:59 GMT	EEE203	Quiz	Video Lecture Segments
Jun 24, 2021 17:59 GMT	CSE250	Pop-Quiz	Week 1
Jun 25, 2021 17:59 GMT	CSE423	PopQuiz	1.1 Intro to Computer Graphics
Jun 25, 2021 17:59 GMT	CSE423	PopQuiz	1.4 Scan Conversion: DDA
Jun 25, 2021 17:59 GMT	CSE423	PopQuiz	2.1 Midpoint Line Derivation Samp; Algo
Jun 29, 2021 17:59 GMT	CSE250	Lab	Lab 1: Introducing Some Basic Components

CSE250

Deadline	Assessment Type	Assessment Name
Jun 24, 2021 17:59 GMT	Pop-Quiz	Week 1
Jun 29, 2021 17:59 GMT	Lab	Lab 1: Introducing Some Basic Components
Jul 1, 2021 17:59 GMT	Pop-Quiz	Week 2
Jul 6, 2021 17:59 GMT	Lab	Lab 2: Introduction to Series and Parallel Circuit
Jul 8, 2021 17:59 GMT	Pop-Quiz	Week 3
Jul 15, 2021 17:59 GMT	Pop-Quiz	Week 4

BUCC Member Develops App That Helps Students Keep Track of Exams and Deadlines

BUCC PR Department member Sanjib Kumar Sen developed a program to help the students of BRAC University keep track of their courses, exams and deadlines by aggregating all the information directly from BRAC University's online education platform "buX"

BUCC Member Develops AI That Solves Sudokus

BUCC PR Member Showmick Kar Developed an AI as a part of an intra club competition that can solve complex sudoku problems.

1	6	9	5	3	8	2	4	7
8	3	4	2	6	7	5	9	1
5	7	2	1	4	9	3	8	6
4	2	3	9	5	6	7		8
		6		8			1	
7			3	1	2	4	6	
3					1		7	
6	1		8			9		3
9	4		6		3			

Congrats!! Press SPACE to start a new game

8	6	1	5	9	4	2	3	7
2	3	4	1	6	7	5	8	9
5	7	9	2	3	8	1	4	6
1	2	3	4	5	6	7	9	8
4	5	6	7	8	9	3	1	2
7	9	8	3	1	2	4	6	5
3	8	5	9	2	1	6	7	4
6	1	7	8	4	5	9	2	3
9	4	2	6	7	3	8	5	1

For visualization,

SCAN ME



Former BUCC GS Stood as Runner-up in FALL18 Intra-University Programming Contest

In Intra University Programming Contest, Mushfiqul Islam Chowdhury, Former General Secretary, BUCC stood RunnerUp. The team name was stalwart.



BUCC Member Develops Game Using Python

BUCC PR Department Member Tonusree Talukder developed a game using Python as a part of an internal skill showcase competition.

BUCC Member Develops Website for Research Consultancy Firm

BUCC Creative department member Syed Zuhair Hossain developed the website for SR Research and Consultancy, a scientific research based consultancy firm.



BUCC Members Take Second Runners Up Position in Web Tech Hackathon 2021

A team consisting of BUCC Members Warsi Sarjeel Rahman and Nafim Ahmed Bin Mohammad Noor took 3rd place in Web Tech Hackathon 2021 organized by the IEEE BRACU Chapter.

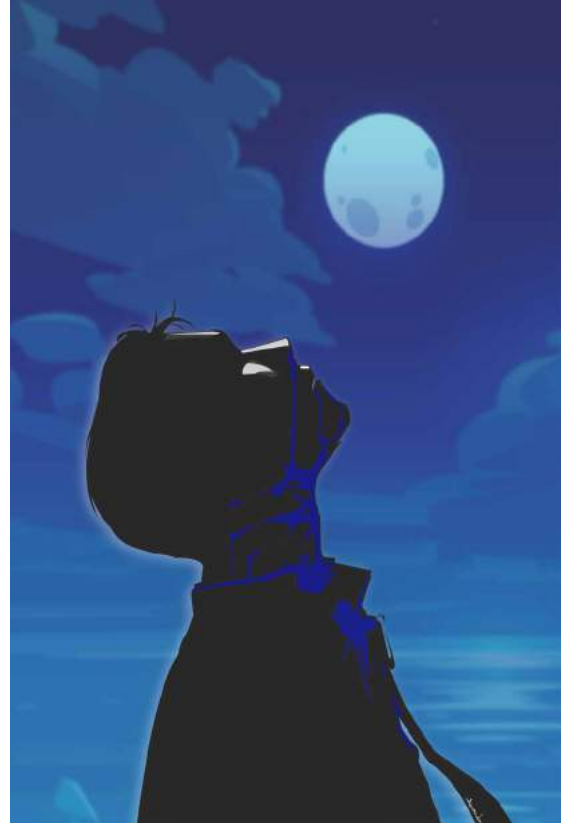
BUCC Member as a Part of a Team Takes 3rd Place in KIBO RPC Programming Skills International Round

A team that included BUCC member Tahsinul Haque Dhrubo took 3rd place in KIBO RPC Programming Skills International Round.

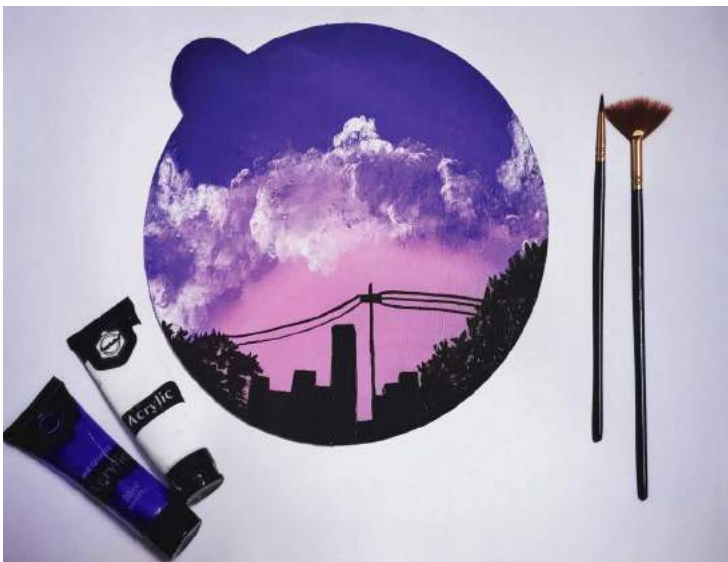
Tier	Rank	Team	Class	Score
	1st	Indentation Error (Thailand)	A	88.22 pt
1st Tier	2nd	GeminiPYTW (Taiwan)	A	71.77 pt
	3rd	Enigma Systems (Bangladesh)	A	59.28 pt
	4th	Cepheus-2 (Indonesia)	A	56.16 pt
2nd Tier	5th	Cosmic Jellyfish (Japan)	A	26.17 pt
	6th	Descendants of the Sun (Singapore)	A	21.00 pt
	7th	Dream Rover (Australia)	A	09.64 pt
3rd Tier	8th	LEMON TREE (Malaysia)	C	58.6 sec
	9th	ELON'S FANGIRLS (New Zealand)	C	3min 40.1 sec

Art Section

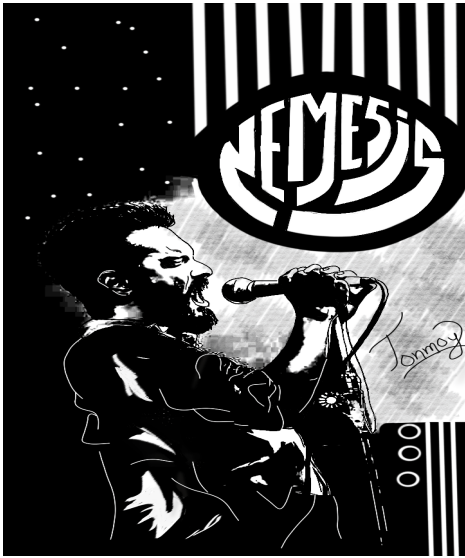
Kazi Shahed Mamun
Department: Creative



Nusrat Zaman Raya
Department: Press Release & Publication



A.T.M Arham
Department: Creative



Saraf Noor
Department: Creative



Md Sabbir Al Mamon
Department: Creative



Maisha Jarin
Department: Communication & Marketing



Kazi Suny Al Jarif
Department: Creative

1958

250 TESTA ROSSA

1962

250 GTO



FERRARI

ICONIC DRIVES

FERRARI

ICONIC DRIVES

1984

TESTAROSSA

1987

F40



FERRARI

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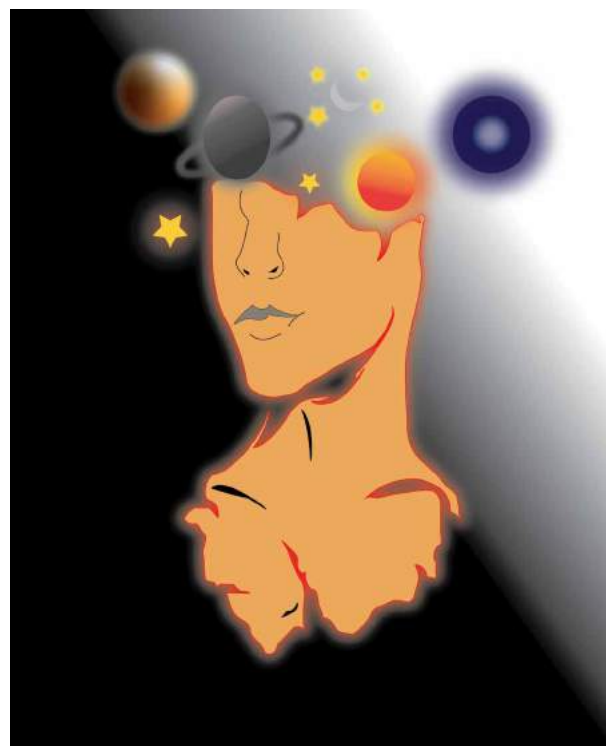
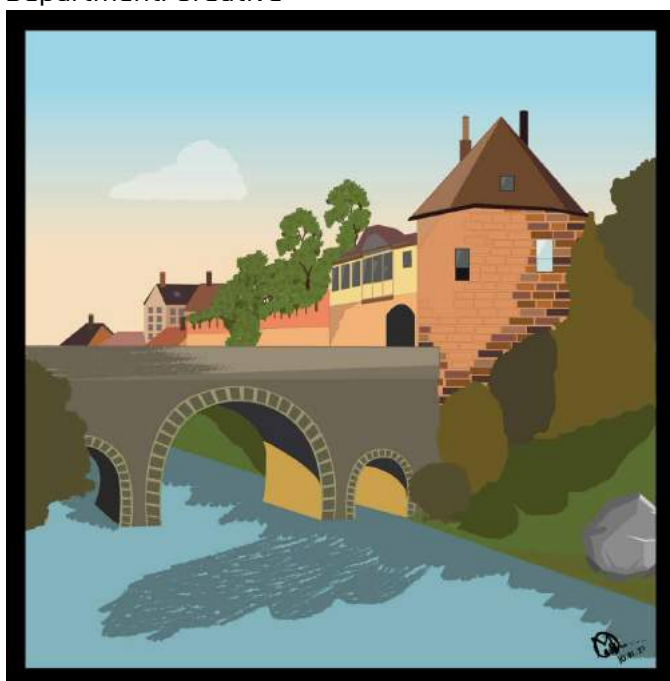
Arnab Saha
Department: Communication & Marketing



Sadia Annafi
Department: Creative



Maliha Bushra Hoque
Department: Creative



Ishrat Jahan Mitu
Department: Communication & Marketing



Dhruba Chakraborty
General Secretary, BUCC



Prabal Chowdhury
Department: Event Management





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