KLS GIT

LOCUS

CSE NEWSLETTER

SEMPTEMBER - DECEMBER

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ABOUT THE DEPARTMENT

The undergraduate course B.E. in Computer Science and Engineering was started in the year 1985 with modest intake of 45 students. Over the years, the intake has increased from 45 to 120 and then 180. The post graduate course M. Tech. in Computer Science and Engineering specialization was started in the year 2006 with an intake of 18. The current intake for post graduate programme is 24. The department has well qualified and experienced faculty and eight of the 39 faculty members are Ph. D. holders with an average teaching experience of 15-20 years. We rigorously follow Outcome Based Education Teaching Learning paradigm to ensure improved quality teaching and

VISION

To be center of excellence for Education, Research and Entrepreneurship in Computer Science and Engineering in creating professionals who are competent to meet emerging challenges to benefit society.

MISSION

To impart and strengthen fundamental knowledge of students, enabling them to cultivate professional skills, entrepreneurial and research mindset with right attitude and aptitude.

Message from Editors

Greetings!

We are delighted to bring to you another edition of our departmental newsletter LOCUS. This edition features activities and achievements of our faculty and students during the months of September through December 2020. During this period, with the pandemic ravaging the world, our students had to adapt to new circumstances, such as online classes and virtual interactions. But within the confinement of their homes, our students excelled in various fields and put their time to productive use.

Starting this edition, we are also excited to give you a glimpse into the creative thoughts and ideas of our students in the form of articles, poems and more. We hope you enjoy this edition of LOCUS!

Best regards,

The Editorial Team
Dept of CSE

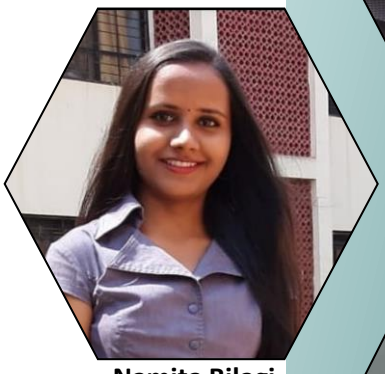
Prof. Vijay Rajpurohit
Head of Dept. CSE

Prof. Pankaja Patil
Staff Co-Ordinator

Meghan Ghivari
3rd Year, CSE

Rashmi K Yamakanamardi
2nd Year, CSE

Varun Shiri
3rd Year, CSE



Namita Bilagi
4th Year, CSE

Aishwarya Hosamani
1st Year, CSE

FACULTY ACHIEVEMENTS

- Prof. R.S.Patil and Dr. Rashmi Jogdand Organized Webinar on "How to Select Your Data Science Projects" for CSE Students on 5th September. 2020. The Recource person was Mr.Kushal Bhangi, Data Scientist ,EY Private LTD,Bangalore
- Prof. R.S.Patil and Dr. Rashmi Jogdand Organized Webinar on "Building LinkedIN and GitHub Profiles for Better Carrer Opprtuinites for KLSGIT Students on 15th September, 2020. The Recource person was Prof. Gajendra Deshpande,KLSGIT,Belagavi.
- Prof. R.S.Patil & Dr. R. H. Goudar Published a Research paper on "Secure Scalable Attribute-Based Access Control (SS-ABAC) in Cloud Environment", International Journal of Advanced Trends in Computer Science and Engineering
- Prof. Padma Dandannavar Organized 2-day long Alumni Webinar series for students that covered a range of topics including – "Journey of a Entrepreneur" by Mr. Milind Katti, CEO & Co-Founder at DemandFarm
  "Entrepreneurial Mindset" by Ameet Mattoo, Founder THINK CHANGE, Organization Development Consultant & Coach.
  "Industrial Automation" by Ms. Vandna Zutshi Bhat, Consultant and Visiting Faculty (Operation Management)
  "NextGen Wireless Networks & disruption opportunities for startup's" by Mr. Preetam Uthaiah, EVP Marketing and Strategy at Saankhya Labs Pvt. Ltd.

FACULTY ACHIEVEMENTS

- Prof. R.S.Patil Successfully Completed Ph.D Defense viva voce, Dept of CSE, VTU RRC, Belagavi in October 2020.
- Prof. R.S.Patil Organized Webinar in Association with BITES on "Future with AI and ML" on 17th October, 2020. The resource person was Mrs.Geeta Prakash , BITES Bangalore.
- Prof. Parimal Tergundi Organized a 2-day workshop on Android Programming on 4th October, 2020.
- Prof. Sangeeta Sangani Published a patent at Intellectual property India on 23rd October, 2020
- Appreciation for best video lecture: Dr. Umesh Kulkarni was awarded Best Video Lecture among 1500 videl lectures recorded during the lockdown period. Awarded prize and appreication from KLS Management, Belagavi on 13th October, 2020.
- Dr. Srinivas R. Mangalwede Attended Certificate course on Java Programming by Oracle Academy, on 30th September, 2020.
- Prof. Manjula Ramannavar Organized Expert talk on "Importance of Web from Industrial Standpoint" for III A students on 27th November, 2020.

FACULTY ACHIEVEMENTS

- Dr. Kuldeep was the Session Chair for 2020 IEEE International Conference for Innovation in Technology (INOCON) at Bengaluru, from 6th November to 8th November, 2020
- Dr. S. R. Mangalwade Organized expert talk for III sem A div students for the subject Object oriented programming with Java on 21st November, 2020.
- Prof. Gouri Khadabadi Presented paper in Fifth International Joint Colloquiums on Computer Electronics Electrical Mechanical and Civil - CEMC 2020 on 30th November, 2020.
- Prof. Girish Deshpande Coordinated Workshop on Innovative Django Application on 13th November, 2020.
- Prof. Manjula Ramannavar Organized expert talk on "Importance of Datastructures from Industrial Standpoint" for III B students on 28th November, 2020.
- Prof.Kavita D. Hanabaratti Organized expert talk for 5th Sem A,B,C students on Advanced Algorithm and Cyber Security on 23rd November, 2020.

FACULTY ACHIEVEMENTS

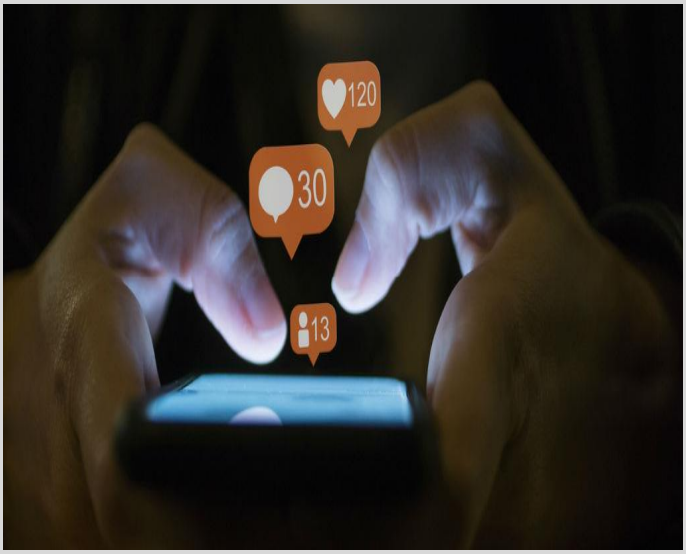
By Prof. Gajendra Deshpande

- Received a Grant of $5000 from Google Cloud his research proposal in Oct 2020
- Presented a poster at Artificial Intelligence and Data Reuse (AIDR 2020) Symposium organized by Carnegie Mellon University Libraries, USA in October 2020.
- Delivered a talk on “Investigating Digital Crimes using Python”, PyCon ES 2020 Pandemic Edition, on 3rd October, 2020.
- Delivered a talk on “Python and FOSS in Education for Generation Z”, PyCon Korea 2020, online, Korea on 26th September, 2020.
- Delivered a talk on “Investigating Digital Crimes using Python”, GirlScript Summit India 2020
- Delivered a talk on “Computation Techniques for Encrypted Data”, PyCon TW 2020, Taiwan held on 5th September, 2020 Edition
- Delivered a talk on “Deceptive Security using Python”, PyCon AU 2020 Online, Australia held on 4th September,2020.
- Received a Scholarship from JupyterCon 2020 organizers to attend JupyterCon 2020.
- Invited as speaker for talk on "Investigating Digital Crimes in Smart Cities using Python", HoneyCon 2020 Spain
- Invited as speaker for the talk on "Python and FOSS in Education for Generation Z", PyCon Indonesia.
- Invited as speaker for the talk on "Inventing Curriculum using Python and spaCy", PyData Global
- Invited as speaker for the talk on "Investigating Digital Crimes using Python", Python Universe Web Edition
- Invited as speaker for the talk on "Python and FOSS in Education for Generation Z", Python Universe WEB

SOCIAL MEDIA

A MENACE TO MENTAL HEALTH

- Kratika Laxetti
2nd year CSE



"Social media is all about adult socializing: connecting with friends, knowing more about the world, and having fun!"-the little me who was not allowed to use it then, always quoted in the urge of exploring it. And I am sure that most of the small innocent minds believed the same. Now that I am efficiently using it, surprisingly I have found it out to be much more than just socializing.

In little more than a decade, the impact of social media has gone from being just an entertaining aspect, to a fully integrated part of nearly every aspect of daily life. And nearly in every field I could say, this social media has invaded abruptly. Celebrities and politicians with their word wars on Twitter, our parents and relatives checking each other's profiles to keep check on their development on Facebook, and we scrolling the Instagram. An average user spent 2 hours and 24 minutes per day on social media in 2020.

Yes, we can't disagree on the fact that social media has many pros. It has been proven as the best way to find your old friends who departed at some point of time, it helps to reduce loneliness of senior citizens who are socially isolated, it allows for quick diffusion of public health and safety information during crisis events, it can help to overcome social stigmas like anxiety or depression, and so on. But, will it not be an injustice to conclude it here? Let's explore other side of the coin too.

Do you remember, for how long those butterflies lasted in your stomach to read all those comments on the picture you posted recently? Probably until you have not read them all. This gesture of knowing people's opinion on your appearance and thoughts is a sign of anxiety. Isn't it? It was just a random poll though.

In 2015, researchers at the Pew Research Centre based in Washington DC found out that social media induces more stress than it relieves. The stress of not going with the trend, the stress of being left out, the stress of not being flamboyant, and the stress of not being them whom you admire on that social media, Though we are connected with people on these platforms, one particularly concern is whether time spent on social media sites is eating away at face-to-face time. The quality time that we used to spend with our loved ones. When it comes to teens, a recent study by Jean Twenge, PhD, professor of psychology at San Diego State University, and colleagues found that, nowadays teens spend "hour less a day engaging in in-person social interaction" — such as going to parties, movies, or riding in cars together — compared with teens in the late 1980s. The study also found that adolescents who spent the most time on social media and the least time in face-to-face social interactions reported the most loneliness.

Cyberbullying is most concerned these days. Cyberbullying is defined as the harassment of an individual via a digital device like a smartphone, tablet, laptop, etc. It occurs over various channels such as social media, chat rooms, gaming platforms, etc. The most worrying aspect of cyberbullying is the effect it has on the victim's mental health. It has a tremendously devastating effect on their self-esteem.

No invention or discovery in this world is blessed to be only a boon. Bane with the boon is unavoidable. Social Media is informative. It is relaxing, if we use it in limits. It shouldn't allow us to neglect the impact it is making on our mental health. These days, "**Social acceptance has become the self-acceptance**". And that shouldn't be somewhere we are heading to. It doesn't mean to delete all the accounts from all those platforms and lead a numb and mundane life. This rapidly growing world doesn't allow you to do so. It has some demands and social media is the means to meet those. But yes, we can to some extent avoid this mess

- Life shouldn't be restricted to frames. It is much more than that we see on the feed.
- Judging any person on the number of likes and comments his post receives on these platforms is not justifiable. Not everything you are can be put onto the feed.
- What to consume is our choice. Choose wisely.
- Bullying someone on the looks and status is not necessary. Life these days is getting harder. So you be kind.

Social media is about to turn as a menace to our mental health. Let's block its way. And make best use of it.

"Social media is to socialize and not to humiliate"

Can Artificial Intelligence Replace Humans?

- Sneha Patil
2nd year CSE

From voice assistants like Alexa to humanoid robots like Sophia and from self-driving cars to disease diagnosis, Artificial Intelligence is being used to develop and design a technology that can make human-like decisions for a wide range of applications. So, do you think AI can replace human intelligence? It's partially yes but definitely no.

In Artificial Intelligence, systems are fed with inputs, and the corresponding output is obtained. These AI systems learn how to do their jobs by analyzing their performance and improve the output by optimizing it to get closer to the required result. The role of this system is to come up with an optimal solution or algorithm to obtain desired output from given sets of data. As a result of these AI systems, massive data sets can be managed with less labor, necessitating less manpower.

AI algorithms can perform a variety of tasks that require human intelligence like decision making, speech and image recognition, and plenty more. Recently developed automated vehicles would be made available to people in future and can slowly take over public transport which will gradually replace bus and taxi drivers. Likewise, these AI systems also are being used in hospitals to perform robot-assisted surgeries and procedures with greater precision that are far beyond human capacity. Along with this, they are used in drug development and diagnosis of diseases, thus playing the role of doctors by assisting the public in monitoring their health.

In a nutshell, we could imagine the application of intelligent systems making human life comfortable and also safe. It is believed that with the advancement of intelligent systems, people involved in the education, agricultural, industries, and also medical care can expect to face employment challenges. But it's a myth. AI won't be taking away the jobs of people but, will launch a whole new industry.

Consider a hypothetical scenario in which we envision the world run entirely on artificial intelligence-assisted technology. We would still require a large human workforce for its maintenance and error-free functioning. This will create employment opportunities for a wide group of technocrats and researchers to explore and implement a world of automation that can enhance the lives of humans. Therefore, the jobs lost due to such technology will be replaced by jobs created after the implementation of AI.

If we consider the innovation and developments that humans have made in this world, it's very fascinating to note that they have produced more jobs than ever, instead of taking them away.

Definitely, in the future, AI systems will become part and parcel of any activity beginning from household to industries to outer space/cosmic applications. But, AI systems are logically driven programs and hence, cannot replace a human touch.

"THE REAL BEAUTY"

- **Akshata Kulkarni**
2nd year CSE

Her mind is like a magical river, with many flowing tributaries...

Her smile floats over a rainbow of the colours of life, which has taken me hostage effortlessly...

This hypnotizing beauty,

This walking embodiment of hers, words fail to describe...

Her voice is like music to my ears,

Oh Queen of Rainbows, what inspires you?

While intoxication is dancing on your palm,

Aren't you a Star born inside the galaxy

AUGMENTED REALITY

THE FUTURE

- Rushab Naik
3rd year CSE

We all have been seeing a lot of science fiction movies since a long time with animated holograms, interactive displays and virtual 3D models. Everyone has wondered if all these things are actually possible? Yes it is real and they are actually in use. That's where AR/VR comes into play.

What is augmented reality?

Augmented reality is the technology that expands our physical world, adding layers of digital information onto it. Unlike Virtual Reality (VR), AR does not create the whole artificial environments to replace real with a virtual one. AR appears in direct view of an existing environment and adds sounds, videos, graphics to it.
The basic idea of augmented reality is to superimpose graphics, audio and other sensory enhancements over a real-world environment in real time. Have you seen Tony Stark working with his prototypes and models?...Yes that's an application of AR. Pokemon Go - The very famous game was based on AR.

How does AR work?

For an augmented reality to start working, cameras must see things, be capable enough to figure out what they are seeing and further categorize it.
The whole process of computer seeing real world includes the machine representing colors by numbers, identifying a similar group of colors and then segmenting the image, searching for lines that meet at object angles and covering a specific part of the image, finding textures, and matching the image with those present in the database. Augmented reality requires discerning objects around the user in terms of both semantics and 3D geometry. Semantics recognizes the object, while geometry figures out where the object is placed.

AR involves technologies like S.L.A.M. (simultaneous localization and mapping), depth tracking (briefly, a sensor data calculating the distance to the objects), and the following components:
Cameras and sensors - Collecting data about users' interactions and sending it for processing. Cameras on devices are scanning the surroundings and with this info, a device locates physical objects and generates 3D models. It may be special duty cameras, like in Microsoft Hololens, or common smartphone cameras to take pictures/videos.
Processing. -AR devices eventually should act like little computers, something modern smartphones already do. In the same manner, they require a CPU, a GPU, flash memory, RAM, Bluetooth/WiFi, a GPS, etc. to be able to measure speed, angle, direction, orientation in space, and so on.
Projection - This refers to a miniature projector on AR headsets, which takes data from sensors and projects digital content (result of processing) onto a surface to view. In fact, the use of projections in AR has not been fully invented yet to use it in commercial products or services.
Reflection - Some AR devices have mirrors to assist human eyes to view virtual images. Some have an “array of small curved mirrors” and some have a double-sided mirror to reflect light to a camera and to a users’ eye. The goal of such reflection paths is to perform a proper image alignment.

Types of AR

- Projection based AR: As the name clearly says this type of AR projects digital images on physical objects in the physical space. It can be interactive and project a digital keyboard on your desk, or a dialer on your hand. It might be non-interactive and it can be used to create projection of objects that you can position and see in depth – for example, it might show you if your future fridge will fit into that space you have near the oven by projecting the fridge in front of you.
- Recognition based AR: Whenever you scan a QR code, or scan an image and it comes to live (just like in iGreet cards) you are actually using a recognition-based AR. This is how iGreet works – the AR app detects and recognizes something called AR marker. Once it recognizes the marker, it replaces it with a corresponding object. Another type of recognition-based AR tech is the one that translates words seen through the camera. This type of AR also seems to be the most widely used one – along with the next one.

- Superimposition based AR: Superimposition based AR also uses object recognition in order to replace an entire object or a part of it with an augmented view. For example, if you've ever played FPS games, you know how your soldier may have advanced military equipment showing infrared view, night vision, radioactive view, etc. – this is all super-imposition-based AR. Also, in medicine, a doctor can use this technology to superimpose an X-ray view of a patient's broken arm bone on a real image to provide a clear understanding of what the bone's damage actually is.

Applications of AR:

Augmented reality has been there in the industry for quite some time now. New and better solutions of AR have been coming throughout the time.

- Gatwick airport passenger app - With the help of more than 2,000 beacons throughout its two terminals, passengers can use the AR maps from their mobile phone to navigate through the airport. As the app matures, it might eventually help improve traffic flow in the airport.
- Ikea Place app - The app was built using Apple's ARKit technology, and it allows you to scan your room and design the space by placing Ikea objects in the digital image of your room to create a new environment with the new products.
- Augmented reality in healthcare - There are some incredibly exciting applications for augmented reality in healthcare from allowing medical students to train in AR environments to telemedicine options that enable medical professionals to interact with patients. In critical situations, augmented reality applications can deliver real-time information to the treatment area to support diagnosis, surgery and treatment plans. AccuVein is a handheld device that can scan the vein network of a patient that leads to a 45% reduction in escalations. Surgeons can plan procedures before making the first cut, models can be made of tumors, and AR diagnostic tools can model disease conditions. Deloitte Research asserts that AR will disrupt the business model and operations of healthcare.

Latest news in AR - Facebook is planning to launch a AR enabled glasses in collaboration Rayban.

AR is being used in multiple industries currently and many are exploring more and more into the this field. We might even see more interesting and exciting projects in Augmented Reality in the upcoming future. Do read about it more.

STUDENT ACHIEVEMENTS

The student team from KLS Gogte Institute of Technology has won Smart India Hackathon 2020 at the nodal center KLE Technological University, Hubballi. This year it was organized remotely across the country. KLS Gogte Institute of Technology, Belagavi has won Smart India Hackathon Winner title 3rd consecutive year and overall 4th winning title. This year 4 teams from KLS Gogte Institute of Technology, Belagavi have been short listed for the grand finale. The winning team (Eureka99) comprises of Vaibhav Muchandi, Varun Shiri, Larina Maskren, Sujay Amberkar, Shramik Murkute and Naman Mehta. The winning team was mentored by Prof. Shrivatsa Perur and Prof. Amruta Deshpande. The students created eArogya portal for Electronic Health Record Management using Blockchain technology. The problem definition was defined by Ministry of Health and Family Welfare. The teams were trained by Prof. Gajendra Deshpande of Computer Science and Engineering Department.

The team CodeBrewers built a Portal for Farmers to sell the produce at a better rate. The team comprised of Tanuj Rao, Shashidhar Patil, Venkatesh Dhongadi, Shrilakshmi Desai, Shreyas Shivakumar, and Varun Joshi. The team CodeBrewers was mentored by Dr. Veena Desai and Prof. Gajendra Deshpande.

The team Paradox built Unified Prediction and forecasting system integrating data such as Meterological data of forecast, yield/production data across states. The team comprised of Utkarsh S. Topinkatti, Vrushabh A. Lengade, Omkar R. Hegde, Prasad P Vernekar, Swapnil R. Chillal, and Harshally Mutgekar. The team was mentored by Prof. Vidyadheesh Pandurangi and Prof. Sangeeta Sangani.

The team Data.py built a portal which automatically generates notes and presentations for for professors and students, also questions and answers. The team comprised of Ananya Singh, Tanuj Kulkarni, Nisha Puri, Karuna Patil, Rohit Poojary, and Md. Shoib Meti. The team was mentored by Ajay Acharya and Rhythm Tyagi.