BITS 'N' BYTES

Department of Computer Science
Parvatibai Chowgule College of Arts and Science

Editorial

As we embrace the opportunities of this September, we proudly present the September issue of Bits 'N' Bytes. We extend our heartfelt thanks to the faculty and students who contributed to this newsletter. We hope you find it both informative and enjoyable.

In this edition, we dive into two captivating topics - "The Power of Artificial Intelligence" and "Chandrayaan 3: Exploring the Moon's South Pole." Warm regards

-VYOM DESAI

S.Y Bsc

Department Activities

Ms. Dikshita Vishram Aroskar and Dr.(Ms.) Sameena Falleiro, Faculty, gave a presentation on "Project Orientation for Final Year Students", on 26th June 2023. It was attended by Faculty and Students of Dept. Of Computer Science. The objective was to brief students on fundamentals of project management, project planning, resource allocation and task scheduling. The students were guided on how they should select industry relevant projects and the current trends, technologies, and methodologies relevant to their projects.

A tree plantation drive was organized in the Department of Computer Science by the core committee of Firebits on 14th July 2023 at 12:45pm. The activity helped create a sense of sustainable future among students, in addition to making them aware of the benefits of a greener environment. A total of 25 participants (organizers - 5 , FY - 5, SY - 15) were present. A wide variety of plants belonging to different categories, like flowers or fruits were planted around the department premises.

A Freshers' Party was organized by students of MSc IT Part 2 for the newly admitted MSc IT students on July 22nd 2023, from 12:30pm onward. Joining on this occasion HOD Computer Science Dr Sameena Falleiro congratulated the part 1 students and encouraged them to actively participate in all academic as well as extra-curricular activities of the Department. Mr Gajanan NIal, Coordinator of MSc IT inaugurated the programme. Faculty of MSc IT Mr Amogh Raiturkar was also present on the occasion. The programme was an excellent initiative by the senior students to make the new comers feel comfortable and at the same time getting to know their peers and benefit from the experiences of the seniors.

Student's Corner

The AI Boom: Is it a Threat or a boost to our job?

Every day we come across new ideas being developed and continuous upgradation of the existing technologies. With the introduction of ChatGPT we have seen an increase in efficiency. Today, we exist in a period known as the AI boom.

What is this AI boom you may ask? This is a ongoing period of rapid and unprecedented growth in the field of Artificial Intelligence. As we come across these new technologies creating significant impact to our day-to-day work, it poses a question 'What could this mean for our job?'.
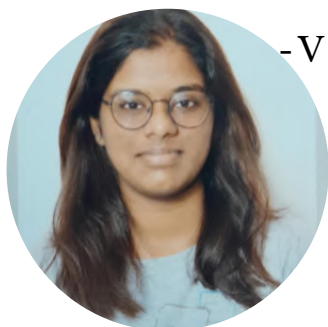
As we came out of the post covid haze, we had seen the world almost struggling to keep its economies afloat. The rise in inflation and the current cost of living crisis has been faced by a lot of nations. But data shows that generative AI has created a positive in global markets. One such instance is observed when OpenAI launched the generative AI chatbot for public use. This launch created a significant jump in tech stocks which further impacted the S&P 500 to shoot up to 3%. We know that this data provides us an insight that economies will improve and productivity will increase. AI boom can also aid in bring foreign investment to a country. According to a Bloomberg report, the tiny Caribbean Island of Anguilla could make $30 million dollars from the AI boom thanks to its unique internet domain.

-VELIKA GOMES
F.Y Bsc

It has been assigned the '.ai' country code which means that anyone wanting an access to a URL ending with this code has to get it from the Anguillan government. Major corporations such as xAI, Meta, Google and plenty of startups already own .ai domains for their respective companies. The registrations for this domain have doubled in the past year which has generated registration fees for the government. According to UN data, .ai domain could contribute around 10% of Anguilla's GDP.

But we need to keep in mind the cost of this development. According to consulting firms, it is observed that generative AI will impact the jobs of higher wage knowledge workers. There is a chance that 46% share of jobs in the office and administrative industry will be taken over by generative AI. We can say that this will definitely boost profitability of businesses but with a downside of a lot of people losing their jobs and therefore increasing unemployment rates. We have already seen this happening with Microsoft, Google and Meta laying off thousands of people in their workforce.

The question that begs to be asked is where do we go from here? How much improvement is too much? How much do we need to change? In this balance of scales, who do we give the utmost importance: profitability or workforce? I think the simple conclusion we can draw for now is that 'only time will tell'.

VIRTUAL REALITY:THE NEW REALITY AND ITS POTENTIAL

In this modern and fast moving life technology plays a very important role in our lives. It had made it practical for humans beings to experience many things and even perform difficult tasks which would not be possible without it. One of the most high-tech development in recent times is the virtual reality. When we hear the term VR or virtual reality the first thing that comes to our mind is science , ficition or something we can't really explain .Actually in simple terms virtual reality or VR as it is commonly know as is a computer created surrounding with scenes and objects. This surrounding is perceived through a device known as a virtual reality headset or helmet. The VR headsets replace the users natural environment with virtual reality content. This also makes the user feel like they are really experiencing the scenes created .Since it is a artificial reality created by a computer and certain software is called "virtual reality". Even though it is still a developing technology, virtual reality has already had a great impact on human beings. This technology uses some of the heavy equipment such a gyroscope for 360-degree interaction and a VR headset to transform the phones display. These equipment are designed keeping in mind the interactivity and the comfort levels of the user.

Controllers, headphones, hand trackers, and 3D cameras are a part of the virtual reality hardware. The use of VR in various sectors has it own positive and negative impact on the society. One if the huge benefit of VR is using it in traning and educational purposes. The tools used to create the VR technology creates a 3D environment to study, this allows the learners to take in more knowledge and learn in a better way with experience. More over this also gives a different perspective to learning that is both interactive and engaging, which can make learning fun process. Similarly the architecture's and interior designers have a huge benefit by using the VR they can experiment with their designs. They can navigate and see virtually how the building will turn out to be long before its built. On the other hand just as virtual reality has a positive impact on the society ,it could also impact the society negatively. Firstly is its high cost for the equipment used and also the scientist, keeping in mind that its complicated to use. Secondly is that this can cause a lot of disturbance and body movements while using the headset. Likewise its also important for human begins to know that it's a man made world and not to be fully be influenced by it. Last but not the least research shows that a lot of time spent on these gadgets has a negative affect on everyone. Virtual reality is an important achievement to the world but its use in our society should be controlled. To sum it all up technology is important in our day to day lives. Virtual reality being one of the recent technologies can help us perform thing which were not possible before. Although it has it own negative and positive affects on human beings like it has the capacity to disassociate us from the real world to a world of ficition , however it is important to limit oneself from overusing these technologies and avoid depriving human begins of their capacity to interact with others

-TANVI VERLECAR
F.Y Bsc

CHANDRAYAAN-3

The Chandrayaan-3 mission marked a significant milestone in India's space exploration endeavors.With Chandrayaan-3's success, India became the first country to land on the south pole of the Moon. The space control room beamed with joy on August 23, when it landed on the moon. In recent years AI is becoming a crucial component of many industries, including space exploration. In this article I'm going discuss how it has been applied in various elements of the mission from the spacecraft's design to the analysis of data and decision-making.

Autonomous Navigation:
One of the most critical aspects of any space mission is navigation. The Moon's uneven terrain made landing a spacecraft safely a difficult task. To overcome this challenge, Chandrayaan-3 was equipped with advanced AI-driven autonomous navigation systems. These systems enabled the spacecraft to make real-time adjustments to its trajectory, ensuring a precise and safe landing.

Data Analysis:

After Chandrayaan-3 safely landed on the Moon's surface, AI continued to play a crucial role in data analysis. The mission's scientific instruments collected vast amounts of data, including images, spectroscopic readings, and geological and mineral composition. This data-driven approach allowed the mission to optimize its scientific objectives and make significant discoveries more efficiently.

Efficient Resource Management:

In the harsh environment of space, resource management is essential for the longevity of a mission. Chandrayaan-3 leveraged AI to optimize the utilization of its onboard resources, including power, fuel, and scientific instruments.AI algorithms are being employed to locate and map interesting features as well as to map out the rover's route.

Adaptive Communication:

AI played a role in adaptive communication protocols that allowed Chandrayaan-3 to optimize its data transmission and reception. AI algorithms continuously assessed the quality of the communication link and adjusted transmission parameters. This adaptive approach ensured that mission-critical data could be successfully transmitted even during challenging lunar conditions.
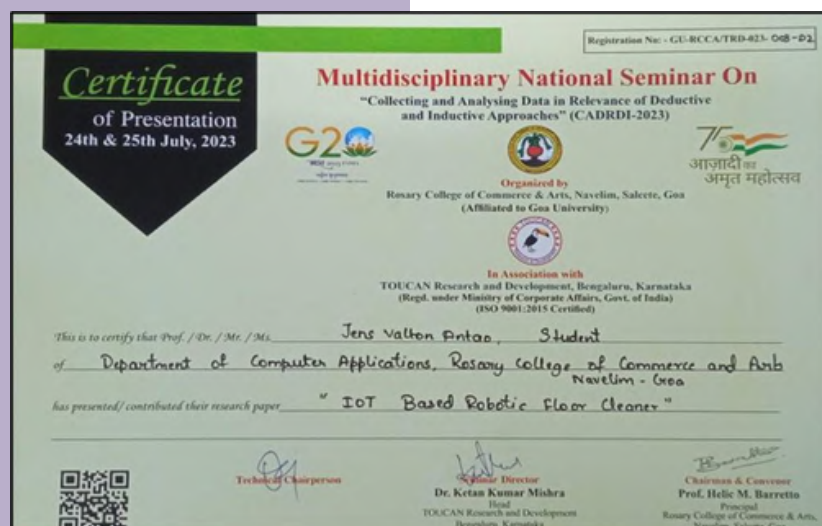

-SERENA ISABEL SERRAO
F.Y Bsc

Student participation:

Mr. Mahesh P. Matha, Assistant Professor, Department of Computer Science (MSc IT) along with 2 students of TYBSc Computer Science, Mr. Aaditya Lobo and Ms. Maheera Shaikh attended the Software Engineering Research in India (SERI) Update Meeting – 2023 that was held on 2nd and 3rd June 2023 in Goa University. The delegates included researchers from the IITs, IIITs and the Software industry.

On 24 July 2023. Jens Antao, MSc Part 1 student, participated in a Multidisciplinary National Seminar on Collecting and Analysing Data in relevance of deductive and inductive approaches (CADRDI-2023) organised by Rosary College Navelim and in association with TOUCAN research and Development Bengaluru Karnataka. He also presented a research paper on IoT Based Robotic Floor Cleaner and got a participation certificate for it.

MSc – IT department organised a 1.5 weeks hands on Workshop on "Basics of Python Programming" for Part I students of MSc – IT . The workshop was conducted by the Part II students of Msc – IT namely, Mr. Joshua Pereira, Mr. Nikesh Singh who were assisted by Mr. Mayur Naik and Mr.Shubham Vishwakarma. A total of 21 students from Part I participated in the workshop where they gained the knowledge from scratch of how to code using Python language. A variety of tasks code solving problems were then given by Mr. Joshua Pereira and Mr. Nikesh Singh at the end of the session where students were made to complete their assignment which were then evaluated by the students. The session was found to be very informative for Part I students. Faculty Mr Amogh Raiturkar was the coordinator for the event.

On 13th of July 2023, Gaurav Dhmasekar, part 1 MSc IT student participated in a Amazon Builders Online series organized by Amazon Web Services. He attended 5 sessons from which got lot of knowledge about AWS Cloud Computing such as How it works, Benefit ,and Security and how AWS help in the security. Also there were other topics from which he got to know more about AWS cloud Computing.

Faculty Corner

Faculty participation:

Directorate of Higher Education in collaboration with Goa State Higher Education Council, Goa State Research Foundation and Goa University organized a Faculty Development Program for non-PHD regular Faculty on 8th June 2023. It was attended by Mr. Ian Barreto, Mr. D. Prabakaran, Mrs. Suchitra Bhat, Mrs. Judith Barreto and Ms. Dikshita Aroskar. The topic of the program was "Enhancing Final Year Student Projects".

Dr.(Ms).Sameena Falleiro participated at the India Super Growth Summit 2023 conducted online on 17th June, 2023 organised by Success Gyan, Bangalore.

Dr.(Ms).Sameena Falleiro, Associate Professor & Head-Department of Computer Science, attended the celebration of the World Youth Skills Day organized by the Directorate of Skill Development & Entrepreneurship, Margao and Government Industrial Training Institute, Borda, Margao,Goa on 15th July, 2023 at Ravindra Bhavan, Margao, Goa. The objective of the programme was to create awareness on the Chief Ministers Apprenticeship Policy and to offer apprenticeship contracts to the selected candidates.

Faculty and Coordinator of MSc IT, Mr Gajanan Nial participated in one day AWS Online Builder Series webinar conducted by Amazon Web Services (AWS) on July 13th 2023. The webinar was a quick start programme with several tracks facilitating building software applications on the cloud platform.

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