SRUJANI - 2024

C.V. RAMAN POLYTECHNIC
BHUBANESWAR

VISION	To become a leader to providing quality education with the state- of-art technologies to address Industrial and societal problems.
MISSION	• To build human resource with sound theoretical and practical knowledge in the discipline of Computer Science & Engineering. • To work in teams for Research, Projects, and Co-Curricular activities involving modern approaches, tools and technology. • To interact and collaborate with professionals from industry, academia, professional societies, community groups for improvements of quality of education.

PROGRAM EDUCATION OBJECTIVES (PEO)	• Apply the principles of Computer Engineering to identify and solve real world problems. • Excel in professional career, exhibit leadership qualities with ethics and soft skills. • Pursue higher education, research or entrepreneurship. • Develop a positive attitude towards lifelong learning and succeed in industry or higher education.
PROGRAM OUTCOMES (PO)	• Basic and discipline specific knowledge • Problem analysis • Design/development of solutions • Engineering tools, experimentation and testing • Engineering Practices for society, sustainability and environment • Project Management • Lifelong Learning
PROGRAM SPECIFIC OUTCOMES (PSO)	• The ability to understand, analyze and develop computer programs in the area of computer science and to solve computer software and hardware related engineering problems. • The ability to develop software systems to allow convenient use of computing system and possess professional skills and knowledge of software design process.

EDITORIAL BOARD

KISHOR KUMAR (3rd year CSE)

KSHYAMASAGAR MAHANTA (asst. prof)

SAMBHU PRASAD PANDA (H.o.D)

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Empowering Innovation: The Computer Science Department at C. V. Raman Polytechnic

The **Computer Science Department** at **C. V. Raman Polytechnic, Bhubaneswar**, is dedicated to shaping the future of technology by fostering innovation, creativity, and technical excellence. Our department continuously strives to provide students with a **holistic learning experience** that blends theoretical knowledge with hands-on practical applications.

Our Vision

To become a leader to providing quality education with the state- of-art technologies to address Industrial and societal problems.

Recent Highlights

⚖ **Advanced Learning Initiatives** – Introduction of the latest **Machine Learning and IoT labs** to enhance practical exposure.

⚖ **Workshops & FDPs** – Successful organization of an **ATAL Faculty Development Program** on *Recent Trends in IoT: Design and Development Opportunities*.

⚖ **Industry Collaborations** – Guest lectures and industry tie-ups to ensure students stay ahead in **emerging technologies** like AI, Blockchain, and Cybersecurity.

⚖ **Student Achievements** – Recognition of students excelling in **hackathons, coding competitions, and research projects**.

What's Next?

We are committed to integrating **cutting-edge technologies** into our curriculum and providing **opportunities for research, internships, and projects** to ensure our students become industry-ready professionals.

With a team of **dedicated faculty members and enthusiastic students**, the Computer Science Department continues to drive excellence and innovation in the field of computing.

Stay curious. Keep coding. Transform the future!

Editorial

By Kshyamasagar Mahanta, Assistant Professor, Department of Computer Science & Engineering

Technology is evolving at an unprecedented pace, and as educators, we stand at the forefront of this transformation. The role of **computer science** in shaping the modern world cannot be overstated—from artificial intelligence and cybersecurity to IoT and blockchain, the future belongs to those who dare to innovate and adapt.

At **C. V. Raman Polytechnic, Bhubaneswar**, our **Computer Science Department** is committed to nurturing a generation of problem-solvers, thinkers, and leaders. The ever-changing technological landscape demands a dynamic approach to education, one that blends **theory with hands-on experience, research with practical applications, and curiosity with creativity**. Through our curriculum, industry collaborations, and continuous faculty development initiatives, we ensure that our students are not just learners but **creators of technology**.

This magazine is a reflection of the vibrant academic culture within our department. It showcases the **achievements, innovations, and aspirations** of our students and faculty. As we move forward, let us remember that the pursuit of knowledge is endless, and every challenge we face is an opportunity to grow.

To all aspiring technologists: **Keep learning, keep experimenting, and most importantly, keep innovating.** The future is yours to shape!

Wishing you all success and inspiration in your journey ahead!

AIML

The Driving Forces Behind Innovation

Artificial Intelligence (AI) and Machine Learning (ML) are at the forefront of technological evolution, transforming the way we interact with machines and process information.
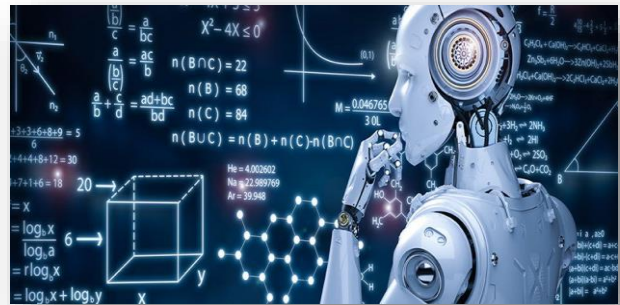
AI refers to the ability of machines to perform tasks that typically require human intelligence, such as problem solving, decision making, and language understanding. ML, a crucial subset of AI, enables systems to learn from data and improve over time without explicit programming.

These technologies are widely used across industries healthcare relies on AI for early disease detection, finance uses it for fraud prevention, and e-commerce platforms leverage ML for personalized recommendations. With advancements in deep learning and neural networks, AIML is set to revolutionize industries further. AI-driven automation, quantum computing, and enhanced human-AI collaboration will define the next era of innovation.

Artificial Intelligence and Machine Learning are no longer just futuristic concepts they are shaping our present and defining our future. As technology continues to evolve, AIML will play a crucial role in solving complex problems and improving lives worldwide.

ANUSHKA PRIYADARSHINI

CSE, F22029007018

ANIMATION

Animation has come a long way from the hand-drawn sketches of the early 20th century to the hyper-realistic digital creations of today. It is no longer just a medium for entertainment; animation has expanded into education, healthcare, business, and even social awareness campaigns. With constant technological advancements, animation has reached new heights, blending creativity with artificial intelligence (AI), virtual reality (VR), and real-time rendering.

Best Animation Techniques

1. **Traditional Hand-Drawn Animation**

   o This classic technique involves drawing each frame by hand. While time-consuming, it has been used to create timeless masterpieces such as *The Lion King* (1994).

2. **Stop-Motion Animation**

   o In this technique, physical objects are photographed frame by frame to create movement. Films like *Coraline* (2009) and *Wallace & Gromit* showcase the beauty of stop-motion animation.

3. **2D Digital Animation**

   o This modern take on traditional animation uses digital tools to create characters and environments. Software like Toon Boom Harmony and Adobe Animate have made this method highly accessible.

4. **3D Animation**

   o The most widely used technique in modern films and video games, 3D animation creates lifelike characters and worlds using software like Blender, Maya, and Cinema 4D.

5. **Motion Capture (Mo-Cap) Animation**

   o This technique records real human movements and translates them into animated characters, bringing unparalleled realism to movies like *Avatar* (2009) and *The Lord of the Rings* trilogy.

6. **AI-Powered Animation**

- o AI-driven tools, such as DeepMotion and NVIDIA's AI-based software, can generate realistic animations with minimal manual effort, significantly reducing production time.

How Animation Benefits Society

1. **Education and Learning**

   - o Animated content has made learning more engaging and interactive. Educational animations help explain complex scientific concepts, historical events, and mathematical theories in a simplified manner. Platforms like Khan Academy and TED-Ed use animations to make learning enjoyable for students worldwide.

2. **Healthcare and Therapy**

   - o Animation is being used in medical training, where doctors and surgeons can practice procedures through realistic simulations. Additionally, animated therapy tools help children with autism understand social interactions, and they assist in mental health awareness campaigns through expressive storytelling.

3. **Marketing and Business**

   - o Businesses leverage animation for advertising, branding, and customer engagement. Animated explainer videos simplify product demonstrations, making them more digestible for consumers. Companies like Google and Apple frequently use animation to present their innovations in an appealing way.

4. **Social Awareness and Advocacy**

   - o Animations have been instrumental in spreading awareness about social issues, from climate change to human rights. Short animated films and public service announcements (PSAs) can convey powerful messages that resonate emotionally with audiences, making them an effective tool for change.

Conclusion

Animation has transcended entertainment to become an essential tool in various industries. The latest technological advancements have not only made animation more efficient and realistic but have also broadened its applications in education, healthcare, business, and social causes. As technology continues

to evolve, animation will play an even greater role in shaping the way we learn, interact, and communicate in the digital world. From traditional hand-drawn art to AI-powered simulations, the future of animation promises limitless possibilities.

Kishor kumar

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DHENKANAL:

A HIDDEN GEM OF ODISHA

Dhenkanal, in the heart of Odisha, is a place of quiet beauty and gentle charm. It is surrounded by green hills, forests, and clear skies.

Saptasajya Hills is perfect for a day out with family, where you can enjoy the cool breeze and the songs of birds. It is believed that Lord Ram stayed here during his exile, and the hilltop temple dedicated to Lord Vishnu attracts devotees and nature lovers alike.

The Kapilash Temple, sitting high on a hill, offers a calm place to pray and a beautiful view of the land below. Nature lovers can visit the Kapilash Wildlife Sanctuary, home to elephants, deer, and many colorful birds. Dhenkanal is also famous for Dhokra art, beautiful handmade metal crafts that carry the skill and love of local artists.

The town becomes even more special during festivals and occasions. Maha Shivratri at Kapilash Temple is celebrated with lights, prayers, and thousands of devotees.

One unique event is the Joranda Mela, held every year at the Joranda Monastery. It is a peaceful gathering of monks and devotees of the Mahima religion. They offer prayers to the sun god, light sacred fires, and chant in harmony. The air feels pure, and the simplicity of this festival touches every heart.

Also, Dhenkanal Laxmi Puja is a grand celebration, known for its beautifully decorated pandals, vibrant processions, and cultural performances. The festival lasts for several days, attracting thousands of visitors who come to witness the devotion, artistry, and festive spirit of the town.

With its quiet nature, kind people, lively festivals, and simple joys, Dhenkanal is a perfect place to rest, explore, and feel   close to nature.

Name-Rinki Mahanta

Regd no.-F2202907081

NETWORK SECURITY:

STAY SAFE, STAY CONNECTED

In today's fast-moving digital age, the internet has become a part of our daily lives. We work, learn, shop, and connect with others online. While this brings convenience, it also opens the door to risks. Cyber threats like hackers, viruses, and data breaches are growing. Protecting ourselves and our information has never been more important. This is where network security steps in.

Network security is the shield that guards our digital systems. It protects computers, mobile devices, and online accounts from unauthorized access and cyberattacks. It ensures that personal information, financial data, and business operations remain safe and secure.

The consequences of weak security can be serious. Cybercriminals can steal sensitive data, drain bank accounts, or disrupt businesses. A single breach can cause financial loss and damage trust. However, safeguarding your digital space is simple with a few smart practices.

Strong passwords act as the first layer of defense. Keeping software updated ensures your system can fight the latest threats. Reliable antivirus protection scans and blocks harmful software. Avoiding suspicious links and emails helps prevent scams. Finally, enabling two-factor authentication adds an extra step to secure your accounts.

In a world driven by technology, being connected is essential – but being secure is vital. By taking small yet powerful steps, we can protect our digital future. Stay informed. Stay protected. Stay ahead.

PUJARANI SATAPATHY

CSE, F22029007071

Poem

Phal ki chinta kyu karta hai Kar tujhe Jo karna hai

Utha dhanus or lar kyuki abhi tujhe sirf larna hai

Na ho niras tu tanik bhi uth kar dekh is ranbhumi ko

Yaha khare hai lakho senani jan nuechhabar karne ko

Agar hata abhi pichhe sansar tujhe kosega

Agar na lara abhi jo tera man tujhe nochega

Kripa hui Krishna ki Arjun ne khud ko pahchana

Krishna na hote to kya hota kisne hai ye jana

Bat sari sunke Arjun ka khoon is tarah khaul gaya

Fir Lara wo aise sara sansar dol gaya

Aage kya hua sab jante sabne usko jana hai
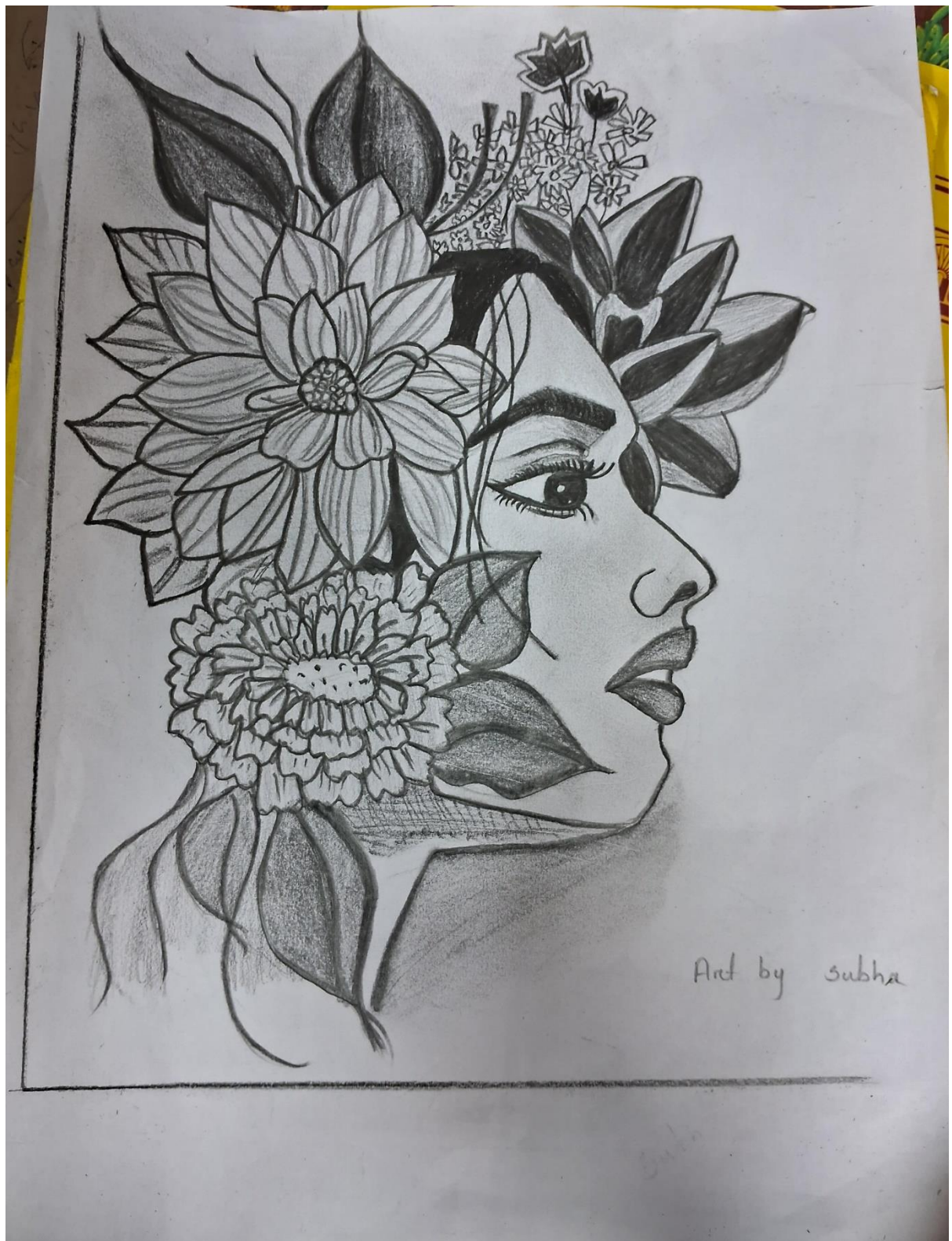
Uski bir gathao ko sabne sach mana hai
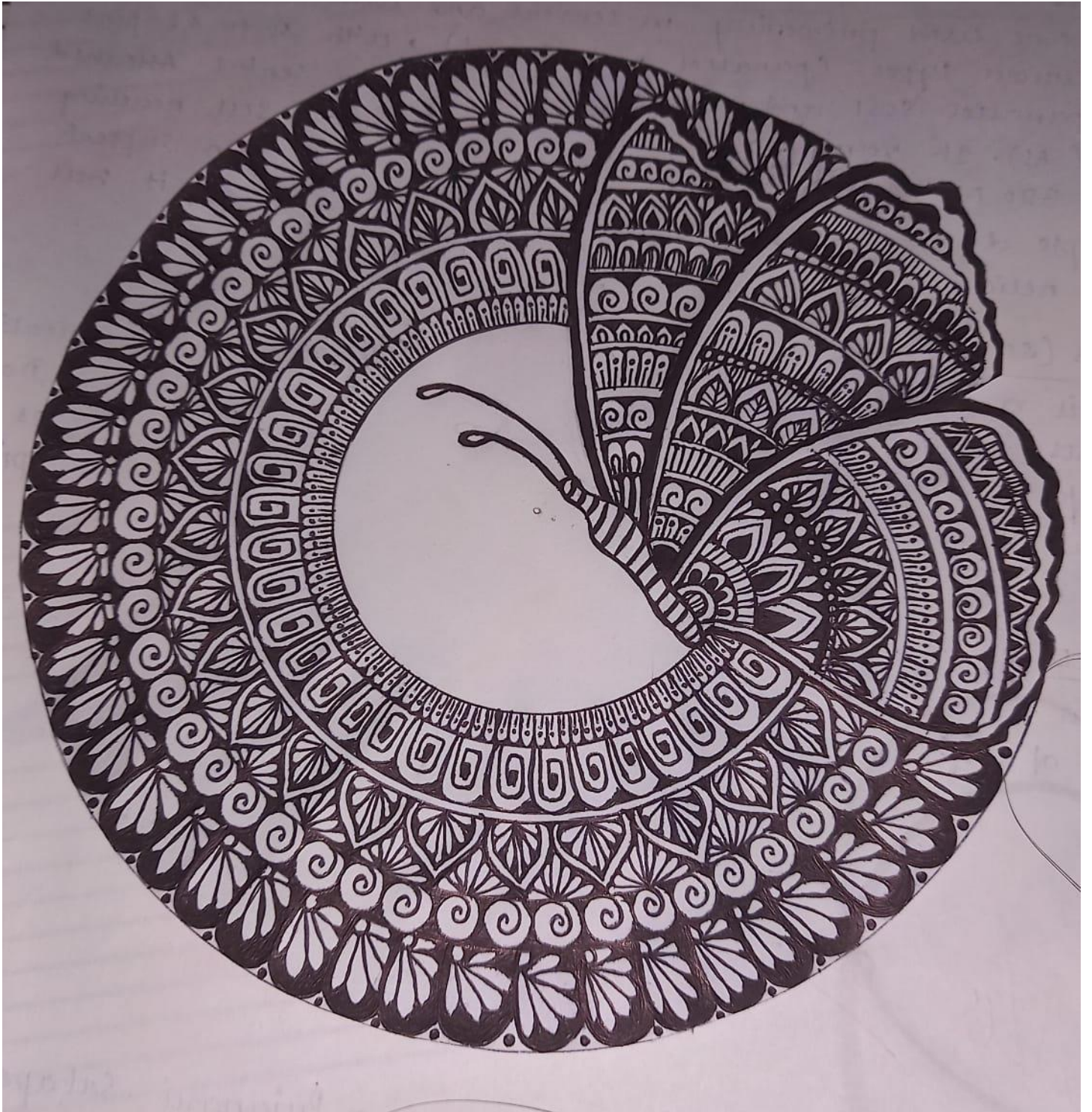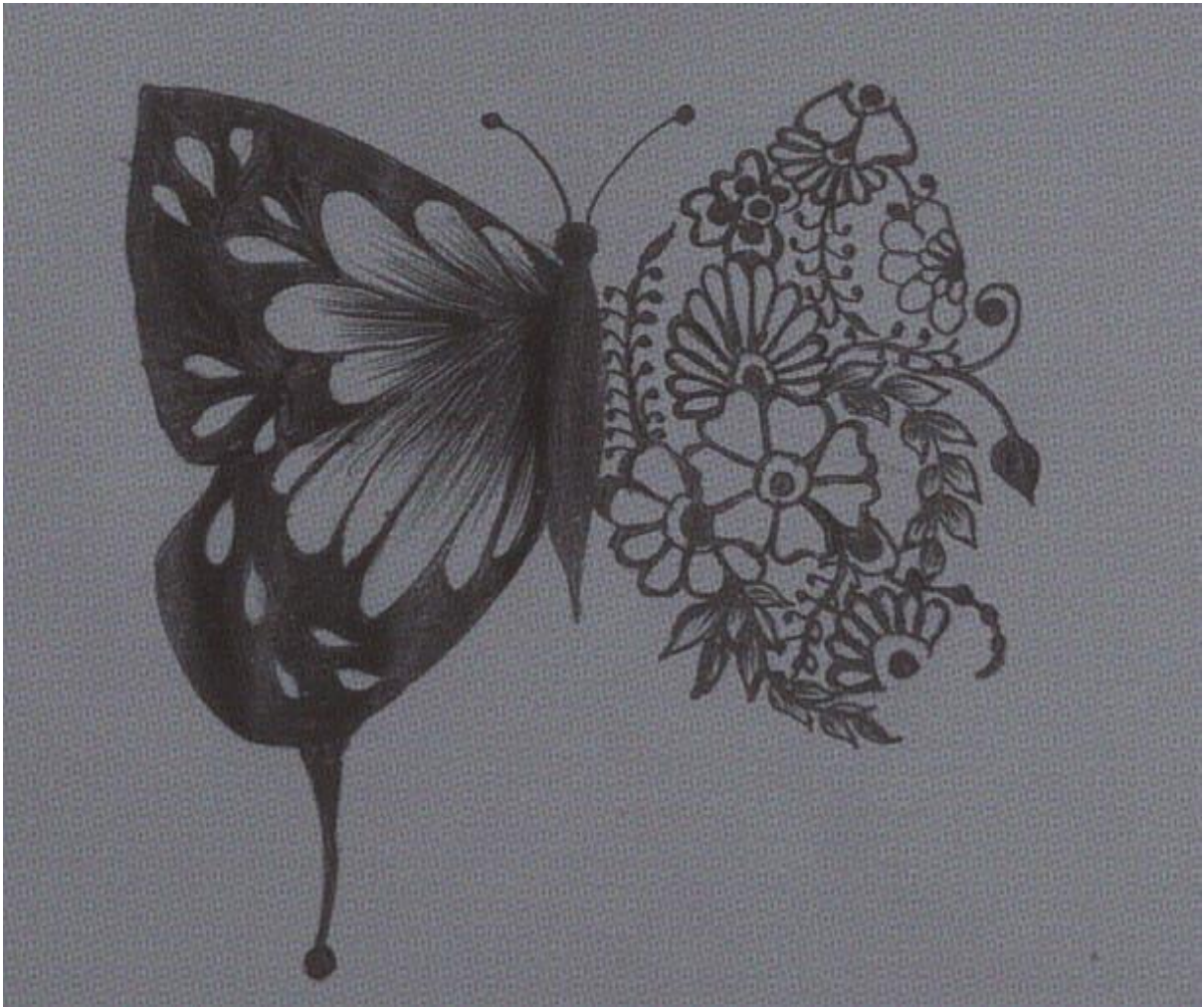
Damodar Kumar

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Photo Gallery

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art by subha

Art by subha

art by subha

Art by Pujarani Satapathy

Art by Pujarani Satapathy

Art by Pujarani Satapathy

Art by Pujarani Satapathy

Art by Pujarani Satapathy

Achievements
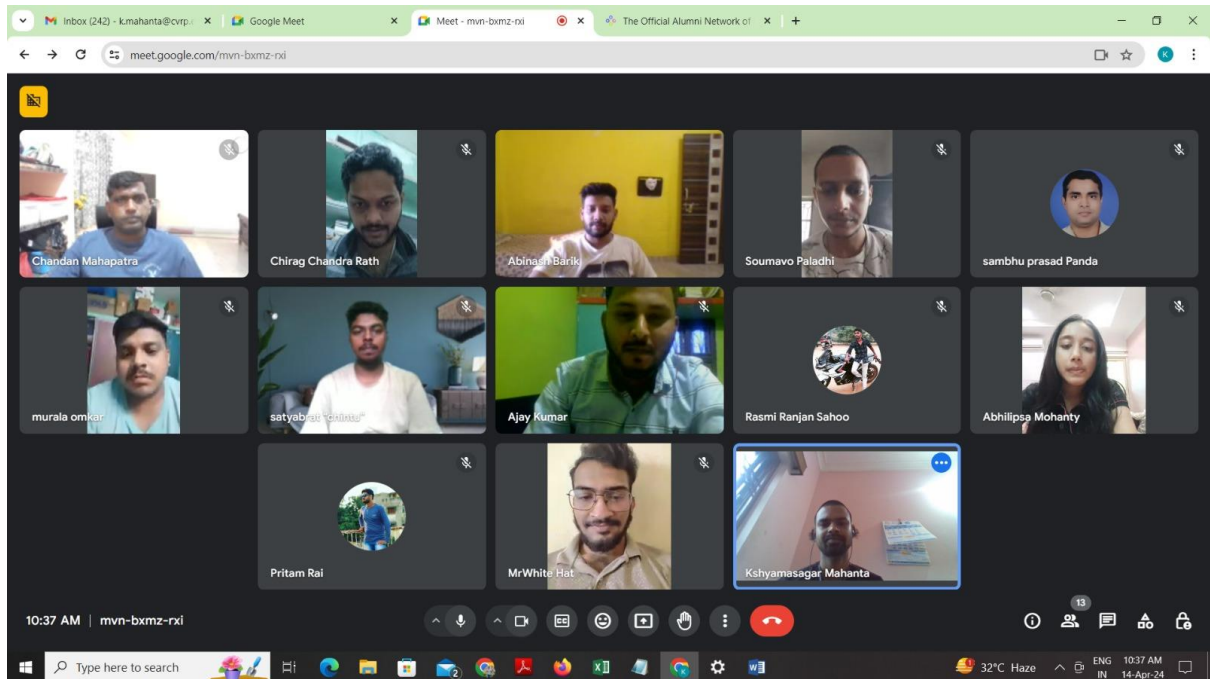
Alumni Meet

Invited talk

Faculty Training

Wold environment Day

Rangoli

Training