EDITION: 15

E-BUZZ

Busy as a bee.....Gathering Information!!!

P.E.S. MODERN COLLEGE OF ENGINEERING

Our Vision:

- To impart holistic Education in Electronics and Telecommunication Engineering to create engineers equipped to meet the challenges of a dynamic, global environment.

Our Mission:

- To impart quality Education in the field of Electronics, Communication and Signal Processing, by providing a comprehensive learning experience.
- To provide avenues to encourage students to continue education in diverse fields.
- To develop competent Engineers, well-versed in multi-disciplinary fields.
- To inculcate ethical and professional values in our students to endow society with responsible citizens

Program Specific Outcomes:

- Apply the Knowledge in E&TC engineering to understand, evaluate, design, or implement the electronics, communication, embedded or information systems or sub-systems using conventional or modern tools/techniques
- Take up jobs in Government or private sectors, undertake research, create jobs or pursue further studies in any of the fields of E&TC, in India or Abroad.
- Incorporate ethical & social responsibility to complete projects in the E& TC and allied fields and use effective written and oral communication skills to present the work.

CHATGPT: AN AI-POWERED CHATBOT REVOLUTIONIZING CONVERSATION

ChatGPT is like a boom these days. We hear It almost every day from everyone around us. It is a perfect example of how technology can be proven to be a boon and to what extent technology can amaze us and leave us in awe.

- Now let's first understand what exactly ChatGPT is and what it does:

ChatGPT is an AI-powered chatbot which is AI-powered and developed by OpenAI. It's based on the GPT (Generative Pretrained Transformer) language model. It uses deep learning techniques to generate human-like responses to text inputs conversationally. This chatbot was developed by San Francisco-based startup OpenAI. Understanding OpenAI was co-founded in 2015 by Elon Musk and Sam Altman. ChatGPT is one of several examples of AI generative. These are tools that allow users to enter written prompts and receive new human-like text or images and videos generated by the AI.

- Further, let's understand what is so special about ChatGPT and why is it hyped so much?

ChatGPT is powered by a large language model, also known as LLM, which it's programmed to understand human language and generate responses based on large corpora of data. ChatGPT's LLM is called GPT-3.5. It is an upgrade of OpenAI's GPT-3 language model. With a whopping 175 billion parameters, GPT-3 is one of the largest and most powerful language-processing AI models to date. It has a remarkable ability to interact in conversational dialogue form and provide responses that can appear surprisingly human. Another thing that differentiates ChatGPT is its ability to log context from users' earlier messages in a thread and use it to form responses later in the conversation.

Article resources: wikipedia.org

Image resources: www.medevel.com

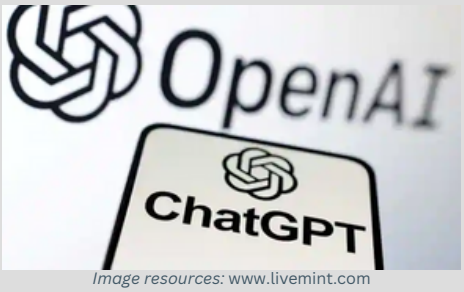

Image resources: www.livemint.com

IMAGE GENERATION USING AI : STABLE DIFFUSION

Stable Diffusion is a deep learning, text-to-image model released in 2022. It is primarily used to generate detailed images conditioned on text descriptions, though it can also be applied to other tasks such as inpainting, outpainting, and generating image-to-image translations guided by a text prompt.

Stable Diffusion AI is an innovative technology that has revolutionized the field of image generation. This technology is based on the concept of diffusion, which involves the gradual spread of particles from an area of high concentration to an area of low concentration. In the case of Stable Diffusion AI, this diffusion process is used to generate high-quality images from text descriptions.

Traditionally, text-to-image generation has been a challenging task for artificial intelligence (AI) models. However, with the development of Stable Diffusion AI, this task has become more feasible. This technology employs a generative model that can learn the statistical distribution of image features from a large dataset of images. This model can then use this knowledge to generate new images based on textual input.

The key advantage of Stable Diffusion AI is that it produces high-quality images with remarkable stability and consistency. This is achieved through a novel diffusion process that involves iteratively refining the generated images. The process starts with a low-resolution image that is gradually refined until a high-resolution image is obtained. This refinement process is stable and deterministic, which means that the generated images are consistent across multiple runs of the model.

Stable Diffusion AI has many potential applications, including in the fields of computer graphics, gaming, and virtual reality. For example, it could be used to generate realistic 3D environments based on textual descriptions or to generate high-quality character models for video games. Additionally, it could be used to create personalized content, such as custom avatars or emojis, based on user input.

The following images attached to this article are generated by Stable diffusion

Article resources: chat.openai.com, wikipedia.org

Image resources: https://discord.com

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From the Principal's desk:

It gives me great pleasure to welcome you all to the 17th edition of E-BUZZ. As we navigate through challenging times, I hope this magazine serves as a source of inspiration and positivity for you. I appreciate the efforts of the E&TC department and wish them success for the future.

Dr. Mrs. K. R. Joshi

From the HOD's desk:

I would like to extend my gratitude to the editorial team for their tireless efforts in putting together this magazine. Their dedication and hard work have resulted in a publication that truly captures the spirit of our department. Surely our editorial team will achieve more greater heights and will be more successful.

Dr. Mrs. R. S. Kamathe

From Editor's desk:

In this edition, we have focused on topics that are relevant to our daily lives to technology and innovation. We look forward for further achievements . A special thanks to my editorial team.

Mrs. S. V. Thuse

AUTHORS

Guglielmo Marconi

Image resources: www.britannica.com

Guglielmo Marconi was born in Bologna, Italy, on April 25, 1874. Educated in physics at the technical school in Leghorn, Marconi had, by the age of 20, become very interested in the works of Heinrich Hertz, who had discovered and first produced radio waves in 1888. Marconi was convinced that communication among people was possible via wireless radio signaling. In 1895, he began to experiment at his father's home in Pontecchio, where he was soon able to send signals over one and a half miles. Marconi traveled to England in 1896 to seek a patent for his apparatus. One was granted to him that year the first patent ever granted for a system of wireless telegraphy. In 1899, Marconi was able to transmit signals across the English Channel, from Britain to France. A year later, he received a patent for "tuned or syntonic telegraphy."This patent number 7,777 allowed simultaneous transmissions on different frequencies. In 1909, when the S.S. Republic collided with an Italian steamer, the Marconi radio operator onboard the Republic was able to guide rescue ships to its position to save more than 1,700 passengers. In 1909 Marconi won the Nobel Prize in physics, which was shared with Karl Ferdinand Braun, who had modified Marconi's transmitters to increase their range and practicality. Marconi was decorated with numerous other awards and honors throughout his lifetime

Article resources: https://lemelson.mit.edu

George Westinghouse

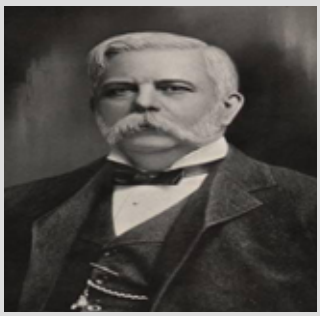


Image resources: wikipedia.org

George Westinghouse Jr. (October 6, 1846 - March 12, 1914) was an American entrepreneur and an engineer. He created the railway air brake and was a pioneer of the electrical industry, receiving his first patent at the age of 19. From his youth, Westinghouse was talented with machinery and business. At the breakout of the Civil War in the year 1862, the 15-year-old Westinghouse enlisted in the New York National Guard. The following year, he joined Company M of the 16th New York Cavalry. In December 1864 he resigned from the Army to join the Navy, serving as Acting Third Assistant Engineer on the gunboat USS Muscoota through the end of the war. After his military discharge in August 1865, he returned and enrolled at Union College. At age 21 he invented a "car replacer", a device to guide derailed railroad cars back onto the tracks, and a reversible frog, a device used with a railroad switch to guide trains onto one of two tracks. He designed the first illuminated tennis court, lit by 1,500 bulbs. He was a tireless inventor and businessman. He designed an air brake that made rail travel safer, and his promotion of an alternating current system revolutionized the power industry. In 1869, at age 22, Westinghouse invented a railroad braking system using compressed air. His company installed 30 more AC-lighting systems within a year and by the end of 1887, it had 68 alternating current power stations to Edison's 121 DC-based stations. This competition with Edison led in the late 1880s to what has been called the "War of Currents" with Thomas Edison. He had a total of 361 patents to his credit.

Article resources: .wikipedia.org

ACTIVITIES

CAREER OPPORTUNITIES AFTER ENGINEERING

Date & Day: 27th September 2022, Tuesday.
Venue: Seminar hall, E&TC Department
Objectives: To share knowledge about career opportunities available after Engineering
Summary of the Activity/Event: Mr Shankar Wadne, a Professor at ACE Academy, conducted a session on career opportunities after engineering. He discussed different avenues available, and the importance of GATE exams, and guided students on reaching their goals. The session provided insights on universities for further studies and tips for excelling in competitive exams. Students found it insightful and interactive.
Outcome: The session helped the students to get an insight about the different opportunities available after engineering.

PROFESSIONAL AND PERSONAL GROWTH FOR TEACHERS

Date & Day: August 5th, 2022. Friday
Venue: Project and Innovation Lab Department of E&TC Engineering.
Objectives: To discuss various factors related to professional and personal growth
Summary of the Activity/Event: A session on "Professional and Personal Growth for Teachers" was organized by the Department of Electronics and Telecommunication Engineering in association with TEESA. Speaker Capt. Nitin Joshi discussed factors for growth, stress management techniques, and balancing professional and personal life. Staff interacted and shared stress-related issues.
Outcome: The faculty gained awareness of balancing professional and personal life, as well as learning techniques to reduce stress in both aspects.

PSYCHOMETRY FOR SELF-DEVELOPMENT

Date & Day: August 8th, 2022. Monday
Venue: Seminar hall, E&TC Department
Objectives: To perform self-assessment of students through Psychometry Tests.
Summary of the Activity/Event: Dr. Nagesh Rajopadhye conducted an interactive session on psychometry for self-development. Participants took a psychometric test and received guidance on interpreting the results. The session emphasized the importance of becoming a holistic person and provided valuable insights for personal growth.
Outcome: The session helped each participant to consider a practical and realistic approach to self-development using psychometric methods.

PREPARATION FOR STUDYING IN UK FOR MASTER

Date & Day: 23rd August 2022,Tuesday
Venue: Seminar hall, E&TC Department
Objectives:.To share the knowledge of career opportunities available after engineering in the UK
Summary of the Activity/Event: .A session conducted by Mr. Nayan Khupte from SI-UK Organization provided insights on studying in UK universities. Topics covered included planning strategies, scholarships, application process, and visa advice. Students gained valuable insights into studying abroad.
Outcome: To make students aware of the scholarships and other facilities available to study in UK.

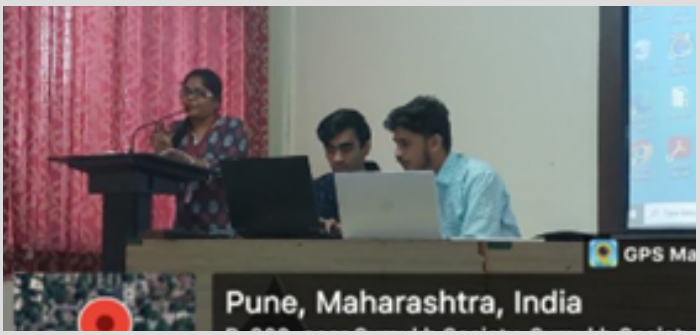
ACTIVITIES

STORY TELLING COMPETITION ON SUCCESS STORIES OF ENTREPRENEURS.

Date & Day: 24th August 2022
Venue: Seminar hall 401
Objectives: To make students aware of opportunities in entrepreneurship.
Summary of the Activity/Event: The Electronics and Telecommunication Department, in collaboration with ED Cell, IIC, and TEESA, organized an event for World Entrepreneurship Day. The activity featured speeches by participants about various entrepreneurs, delivered in English, Hindi, and Marathi. The event concluded with Guest Mayuresh Kulkarni Sir emphasizing the importance of innovation and practical learning in entrepreneurship.
Outcome: The event offered insights into entrepreneurship, improved language proficiency, and motivated participants to embrace innovation.

GUEST LECTURE ON : DESIGN A WEBPAGE

Date & Day: 5th November 2022, Saturday
Venue: 401, Seminar Hall
Objectives: To introduce the need for a Web Page
To design the web page.
Summary of the Activity/Event: PES's Modern College of Engineering's E&TC Department organized a guest lecture on "Design a Webpage," conducted by Mr. Rutvij Hadap, CEO of Doptech Solutions, Pune, aimed at imparting skills and insights to third-year electronics and telecommunication engineering students about web page design. The lecture covered topics from the fundamentals of web pages, HTML, CSS, and Javascript, offering students a practical learning experience in designing web pages.
Outcome: The activity helped the students to learn the basics of designing a web page. Students learnt various commands used to design a webpage.



INDUSTRIAL VISIT FOR SE (2022-23)

Date & Day: 12th November 2022, Saturday
Venue: Keetronics Pvt, Ltd, Kothrud Industrial area
Objectives: To explore real workstation plants
Summary of the Activity/Event: An industrial visit was arranged for the second-year students of the E&TC Department to Keetronics (India) Pvt. Ltd., Pune. The company is a leading manufacturer of input devices required for any type of gadget in terms of switches. The industry personnel explained the manufacturing, working, and testing of PCB-based and PCF-based advanced input devices and touch electrical switches. Functional printed electronics: For this, they have explored the different sections of the industry, such as screen printing. Digital printing, ultrasonic PCB cleaning, CNC router cutting, pneumatic vacuum forming Laser Cutting. Berg Cutting. SMD Soldering, Stud Fixing, and Epoxy Doming Hydraulic Machine, Lamination Forming Quality Check Life Assurance R&D and innovation Students are also exploring the latest technologies like printed batteries and printed LEDs. Printed Sensors Further, they have explained various keyboards and applications of these in medicine and defence. Railway automation, fuel dispensing pumps, and home automation
Outcome: The industrial visit to Keetronics (India) Pvt. Ltd. provided second-year E&TC students with hands-on insights into advanced input device manufacturing, functional printed electronics, and cutting-edge technologies like printed batteries and sensors, along with their diverse applications.

HANDS ON WORKSHOP ON PCB DESIGN WITH EAGLE 2K22

Date & Day: 29,30th November 2022, Tuesday, Wednesday
Venue: Seminar hall 401
Objectives: To explore Eagle Software for PCB Design
Summary of the Activity/Event: The workshop was organized for second-year E&TC students to make them aware of the process of PCB design with Eagle software. The importance of PCBs, their types, and the process of PCB design are explained in detail, which consists of creating a schematic. ERC (electrical rule check), DRC (design rule check), auto-routing, and testing of the circuit with Eagle The student also learned about the etching process for PCBs.

Students learned about the following:
1. PCB types and designs, Process of single-layer PCBs.
2. The detailed process of PCB design in Eagle Software
3. Etching process of PCB

Outcome: The workshop acquainted second-year E&TC students with the PCB design process using Eagle software, encompassing PCB types, detailed design steps, and the etching process.