TECH NEWS

Official Newsletter of the Department of MCA
(P.E.S. Modern college of Engineering , Pune)

ABOUT US...

From the Principal's desk :

The aim of the institute is to develop not just top-quality engineers but also well-developed people. Our motto, therefore, is "the joy of excellence in a world of high technology "As professional you are required to gain knowledge and use it effectively even when you are exposed to pressure. You can surely face the challenges in the world with great courage if you can manage your valuable time and set your priorities, by having healthy competition and team spirit. Working in a team, effectively yields the best results, even under tight deadlines. My congratulation to MCA Department for their consistent efforts in making the newsletter and I wish that they will continue to do this in the years to come.

– Dr. Mrs. K. R. Joshi

From the Editor's desk :
It gives me immense pleasure to present our biannual e-newsletter "TechNews" for the current semester. I would like to thank our HOD and my colleagues for their support in making this issue. We have worked hard to bring up an exhilarating flashback of the events, and achievements during the session 2022-23 Term I. I hope you find it interesting.
- Miss. Mugdha Dharmadhikari

From the HOD's desk:

It's a great pride to present our Master of Computer Application Department's e- Newsletter "TechNews", our very own newsletter which includes different activities articles, and achievements of the MCA students. My congratulations to the team who took the responsibility for carrying out this task effectively
- Dr. Mrs. Pradnya A .Muley

About The Department :
The department of Master of Computer Application (MCA) has been started in the academic year 2003 - 04 and is permanently affiliated with Savitribai Phule Pune University and recognized by AICTE and DTE. The mission of the department is to contribute to the growth of technical education and to lead to its enrichment and advancement.

Program Educational Objectives:

1. Graduates will possess a broad knowledge of computer applications for successful careers in the industry.
2. Graduates will exhibit professionalism, ethical attitude, communication skills, and teamwork in their profession and adapt to current trends by engaging in lifelong learning.
3. Graduates will contribute as responsible citizens with a commitment to the sustainable development of society

Department Vision :

- To develop Competent Technocrats in the field of Computer applications imbued with human values.
- To impart knowledge in the field of Computer applications with a focus on developing the required competencies.
- To improve the technical skill of the students through practical and hands-on experience.
- To make students socially responsible citizens. To enhance the quality of the students by collaboration with Alumni and Industry.

Program Outcomes:

After completing the MCA degree student will be able to:

1. Apply knowledge of mathematics, and computer science appropriate for real-world applications.
2. Identify, formulate, analyze, and solve complex computing problems using relevant domain disciplines.
3. Design and evaluate solutions for complex computing problems that meet specified needs for real-world applications.
4. Apply programming logic including the design of algorithms, programs, analysis, and interpretation of data to provide valid solutions.
5. Apply appropriate techniques and modern computing tools for the development of real-world applications.
6. Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practices.
7. Understand the need and develop the capacity to persistent learning for continual development as a computer professional.
8. Participate as a member and leader in a team and stand out in multidisciplinary environments to demonstrate computing and management skills.
9. Communicate effectively to comprehend and present effective technical Documentation.
10. Apply the computing knowledge efficiently& effectively with concern for societal, environmental, and cultural aspects relevant to professional computing practices.
11. To contribute effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.
12. To identify a timely opportunity and innovation with entire effort to function as a successful entrepreneur

Technology behind Chat GPT

Chat GPT-3, or Generative Pre-training Transformer 3, is a revolutionary artificial intelligence (AI) technology developed by OpenAI that allows chatbots to understand and generate human-like natural language with unprecedented accuracy and fluency. It is the largest, most powerful language model ever created, with 175 billion parameters and the ability to process billions of words in a single second.

Chat GPT-3 works by pre-training a deep neural network on a massive dataset of text and then fine-tuning it on specific tasks, such as answering questions or generating text. The network is made up of a series of interconnected layers, or "transformer blocks," that process the input text and generate a prediction for the output.

Chat GPT Statistics:

- OpenAI's valuation reached $29 billion following the launch of Chat GPT.
- Within a week of its launch, Chat GPT gained one million users.
- Chat GPT crossed 57 million monthly active users during its first month of availability.
- According to reports, OpenAI spent $12 million on a single training run for the AI model.

Step 1
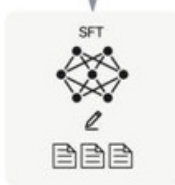**Collect demonstration data and train a supervised policy.**

A prompt is sampled from our prompt dataset.

Explain reinforcement learning to a 6 year old.

A labeler demonstrates the desired output behavior.

We give treats and punishments to teach...

This data is used to fine-tune GPT-3.5 with supervised learning.

SFT

Step 2
Collect comparison data and train a reward model.
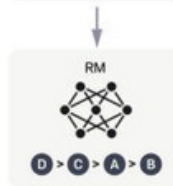
A prompt and several model outputs are sampled.

Explain reinforcement learning to a 6 year old.

A: In reinforcement learning, the agent is...
B: Explain rewards...
C: In machine learning...
D: We give treats and punishments to teach...

A labeler ranks the outputs from best to worst.

$D > C > A > B$

This data is used to train our reward model.

RM

$D > C > A > B$

Step 3
Optimize a policy against the reward model using the PPO reinforcement learning algorithm.

A new prompt is sampled from the dataset.

Write a story about otters.

The PPO model is initialized from the supervised policy.

PPO

The policy generates an output.

Once upon a time...

The reward model calculates a reward for the output.

RM

The reward is used to update the policy using PPO.

r_k

TECHNO BUZZ

AI Image-Generation

AI image generation is a subfield of machine learning that involves creating new and original images using deep neural networks. These neural networks are trained on large data sets of images, and they learn to recognize patterns and features within the images. Once they have learned these features, they can then generate new images that share similar characteristics.
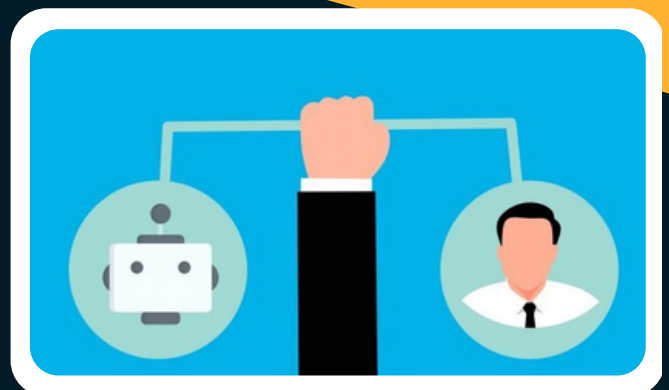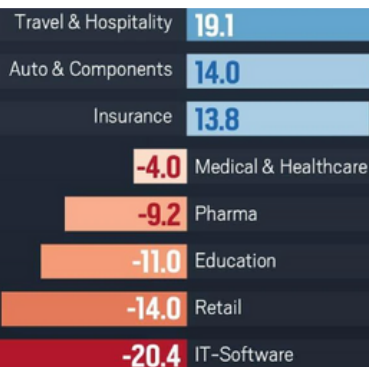
There are several different approaches to AI image-generation, including generative adversarial networks (GANs), variational autoencoders (VAEs), and neural style transfer. Each approach has its unique strengths and limitations, but all aim to generate new images that are realistic and aesthetically pleasing.

independent AI artist with private/local art generator
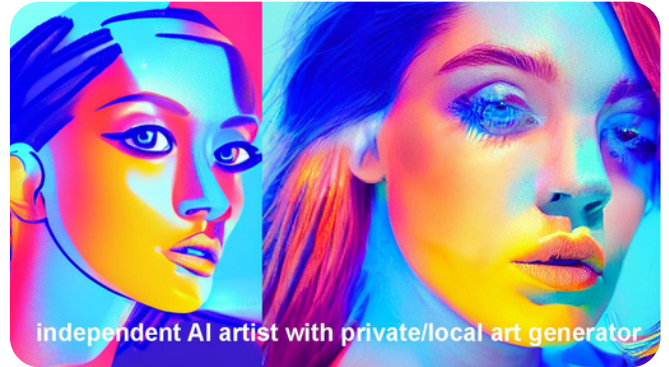
Will global layoffs jolt India's IT industry?

India is one of the major I.T service providers in the world and a good amount of money comes from these exports and consultancy projects. Most of the reputed companies employ Indian software professionals for both onsite and offsite operations. With the global recession set, the business houses are bound to find it difficult to get on with existing projects, leave alone new projects which are income resources for the company.

In the absence of revenue, to tide over the financial crisis, the companies were left with no option but to limit recruitment, downsize the establishment costs, weed out unprofitable operations, postpone expansion programs, etc. The expenditure on staff costs are revisited and actions will be taken to cut down the benefits, amenities, subsidies, etc., and as a part of this exercise, may lay off its unproductive manpower. It is a general rule that when you enjoy the benefits of a good society, you need to take the worst too. Therefore, the Indian I. T industry has to bear the impact of the world wide recession.

Travel & Hospitality	19.1
Auto & Components	14.0
Insurance	13.8
-4.0	Medical & Healthcare
-9.2	Pharma
-11.0	Education
-14.0	Retail
-20.4	IT-Software

RESULTS

SHREYA
SHRINIVAS
DESHPANDE
8.86 SGPA

NIKITA
SOLANKI
8.62 SGPA

Congrats!

MADHUMITA
SARKAR
8.86 SGPA

TECH NEWS

Technology is best when it brings people together .....

Editorial Board

Ms. Mugdha Dharmadhikari

Yash Kanapade

Vanessa More