ACE

TECHIE TALK

VOL.12 NO.2, 2022

Topics covered in this issue :

- Voice morphing
- 3D printing technology
- Blue eyes technology
- Metaverse
- Fuzzy logic system

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MEENAKSHI SUNDARARAJAN ENGINEERING COLLEGE, CHENNAI - 24

FROM THE HOD'S DESK

- Dr. B. MONICA JENEFER, HOD, DEPT. OF CSE

Greetings!

It gives me immense pleasure in releasing the May/June edition (Vol. 12 No. 2) of "Techie Talk" - a newsletter from our department through the ACE - Association of Computer Engineering.

Techie Talk aims to keep the students informed of the latest technologies through a plethora of articles contributed by the students and faculty members of our department. My heartfelt congratulations to those who have contributed articles and strived to make this newsletter a big success. I would also like to appreciate the Editorial Board for their sincere efforts.

My best wishes to all the students for their upcoming end semester examinations. I specially wish the final year students for achieving a bright and prosperous career.

FROM THE EDITOR'S DESK

- Dr. M.K. SANDHYA, PROFESSOR, DEPT. OF CSE

Dear Readers,

Greetings!

I'm extremely happy to release the May/June edition (Vol. 12 No. 2) of Techie Talk. This newsletter presents a wide range of articles on the latest technologies along with snippets of information. This issue highlights the interest, skill and creativity of the students.

It is really heart-warming to see all the contributions from students amidst their academic schedule. The Editorial Board appreciates the time and effort that has been devoted by the different contributors. Suggestions to improve the newsletter format and content are always welcome.

CONTENTS

VISION AND MISSION OF THE INSTITUTE

Vision: To impart state-of-the art technical education, including sterling values and shining character, producing engineers who contribute to nation building thereby achieving our ultimate objective of sustained development of an unparalleled society, nation and world at large.

Mission: Meenakshi Sundararajan Engineering College, Chennai constantly strives to be a Centre of Excellence with the singular aim of producing students of outstanding academic excellence and sterling character to benefit the society, our nation and the world at large.

To achieve this, the college ensures

- Continuous upgradation of its teaching faculty to ensure a high standard of quality education and to meet the ever-changing needs of the society.
- Constant interaction with its stakeholders.
- Linkage with other educational institutions and industries at the national and international level for mutual benefit.
- Provision of research facilities and infrastructure in line with global trends.
- Adequate opportunities and exposure to the students through suitable programs, to mould their character and to develop their personality with an emphasis on professional ethics and moral values

VISION OF DEPARTMENT : To achieve academic excellence in Computer Science and Engineering by imparting quality training, encouraging research activities and innovation, inculcating ethical values and preparing the students to face industrial demands, societal needs and technical challenges.

MISSION OF DEPARTMENT :

To provide quality education in theory and application of Computer Science and Engineering.

To inculcate analytical thinking and innovation within students to become technically competent professionals.

To prepare students to excel in competitive and challenging careers.

To generate socially responsible citizens with ethical values for facing industrial and societal challenges.

To promote research in the emerging areas of technology convergence.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

- Prepare the graduates for a successful career in industry and motivate them for higher education and research.
- Provide graduates with a firm foundation in the principles and practices of computer science and engineering including mathematics, physical sciences, and basic engineering.
- Impart application skills to cover broad range of industrial demands.
- Prepare graduates with ethical values, leadership qualities and entrepreneur skills to contribute to their profession and society.
- Train graduates to be able to use new techniques and skills for professional excellence

PROGRAM OUTCOMES (POs)

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. . Problem analysis: Identify, formulate, research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs)

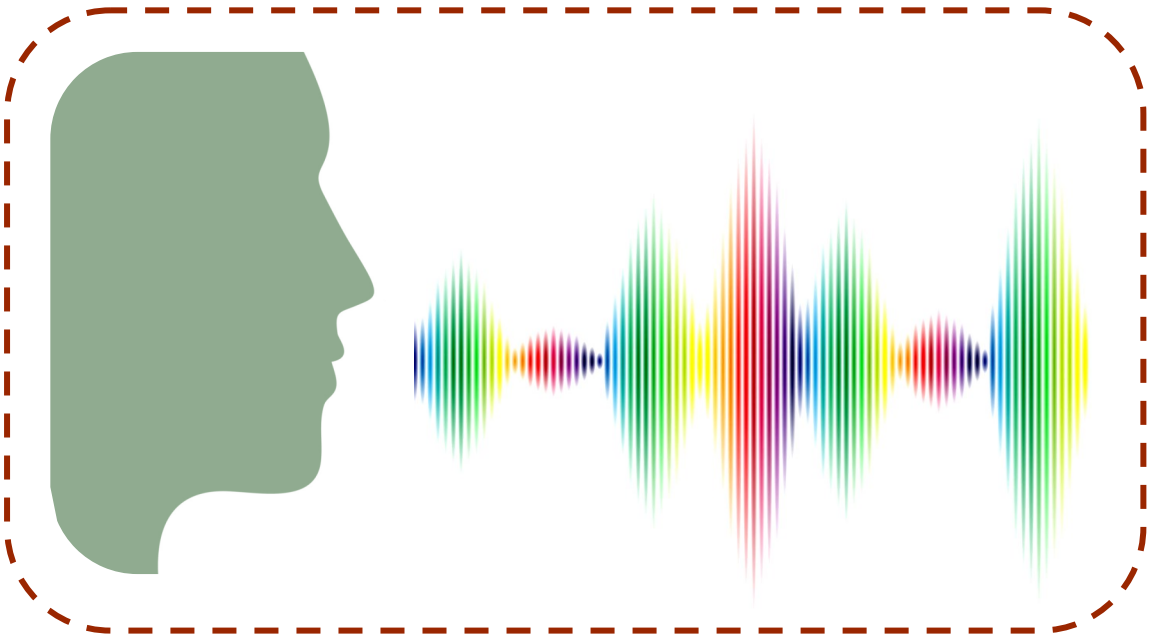
- Ability to identify, analyse, design and implement computer based system of varying complexities.
- To apply hardware/software methods, open ended programming environments and available tools in emerging technologies for solving real-life and R&D problems
- Employing engineering solution for ground-breaking career paths, to become leading entrepreneur and develop interest for further studies

VOICE MORPHING

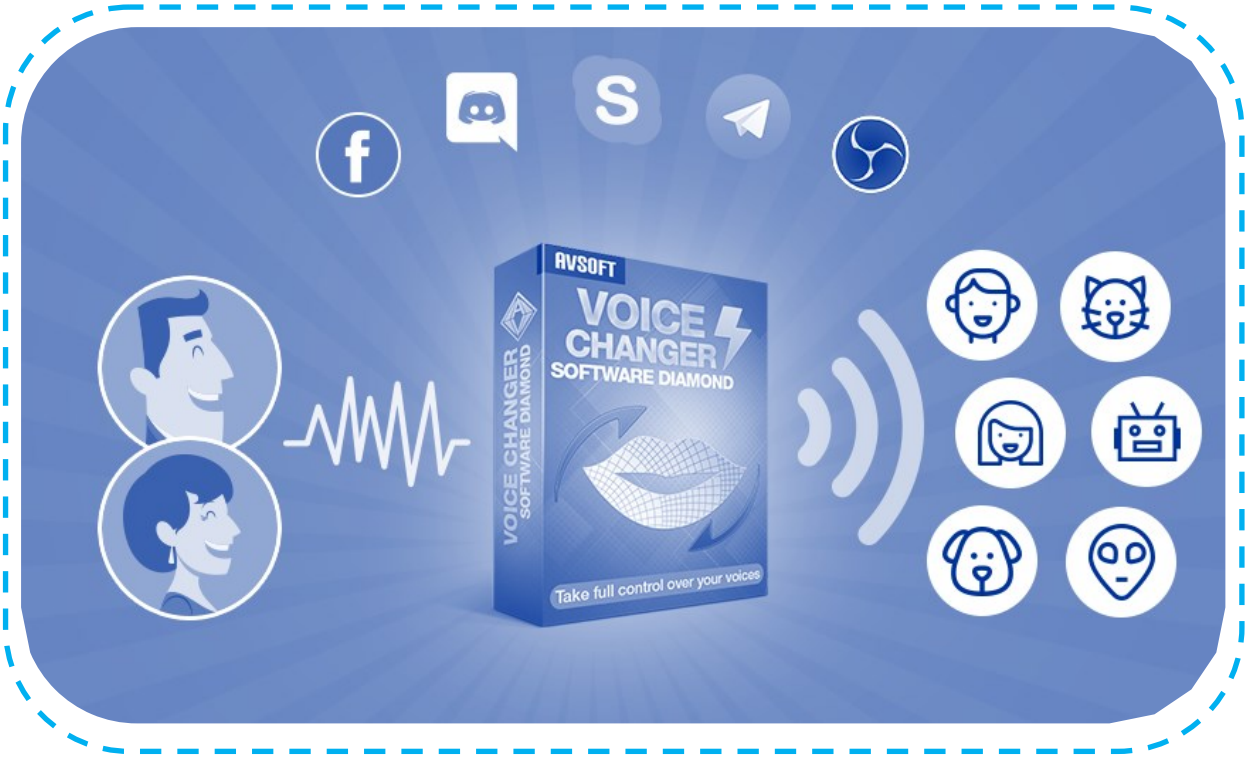
- Sivamanikandan S, IV CSE

Voice morphing means the transition of one speech signal into another. Like image morphing, speech morphing aims to preserve the shared characteristics of the starting and final signals, while generating a smooth transition between them.

Speech morphing is analogous to image morphing. In image morphing the in-between images all show one face smoothly changing its shape and texture until it turns into the target face. It is this feature that a speech morph should possess. One speech signal should smoothly change into another, keeping the shared characteristics of the starting and ending signals but smoothly changing the other properties.



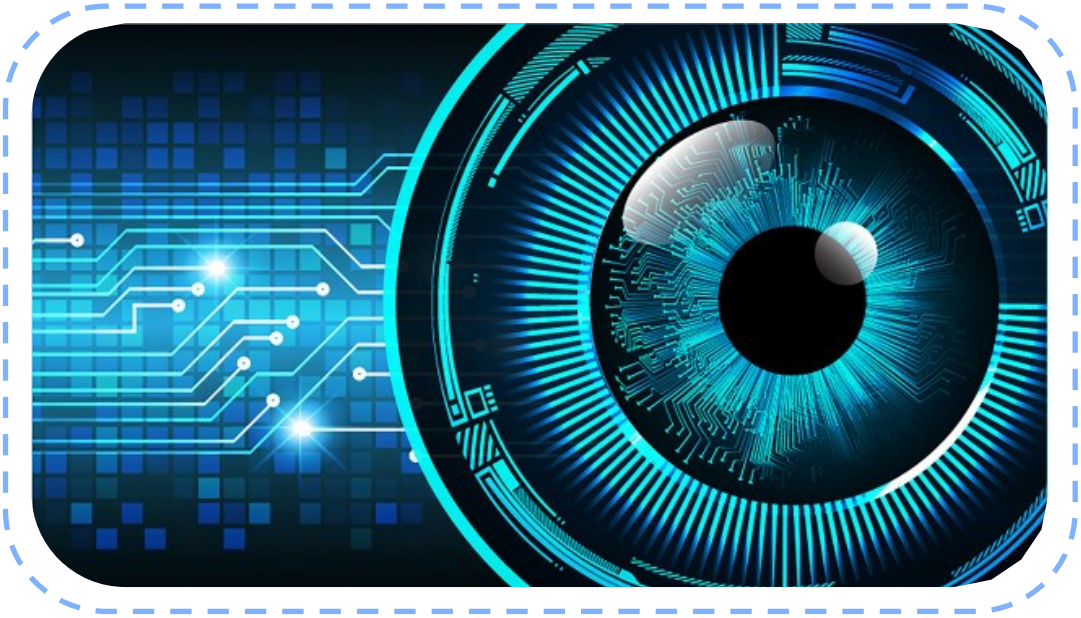
The major properties of concern as far as a speech signal is concerned are its pitch and envelope information. These two reside in a convolved form in a speech signal. Hence some efficient method for extracting each of these is necessary.



We have adopted an uncomplicated approach namely cepstral analysis to do the same. Pitch and format information in each signal is extracted using the cepstral approach. Necessary processing to obtain the morphed speech signal include methods like Cross fading of envelope information, Dynamic Time Warping to match the major signal features (pitch) and Signal Re-estimation to convert the morphed speech signal back into the acoustic waveform.

BLUE EYES TECHNOLOGY

- Divya E, IV CSE



The world of science cannot be measured in terms of development and progress. It shows how far human mind can work and think. It has now reached to the technology known as “Blue eyes technology” that can sense and control human emotions and feelings through gadgets.

The eyes, fingers, speech are the elements which help to sense the emotion level of human body. This paper implements a new technique known as Emotion Sensory World of Blue eyes technology which identifies human emotions (sad, happy, excited or surprised) using image processing techniques by extracting the eye portion from the captured image which is then compared with stored images of the database. After identifying mood the songs will be played to make human emotion level normal.

The aim of the blue eyes technology is to give human power or abilities to a computer so that the machine can naturally interact with human beings as humans interact with each other, through speech, facial expressions and touch.

Nowadays, technology has reached enough that we are sitting in front of our personal computer that can sense and control human emotion known as “blue eyes technology ” . In this technology the gadgets are used which can sense the emotion level of the human body like facial and speech recognition et cetera. The technology which is used in Blue Eye Technology can understand our emotions at the mouse, it verifies our identity, feels our presents and starts interacting with us. In this paper a discussion of new techniques known as Emotion Sensory world of Blue Eye Technology which identify human emotion (sad, happy, surprised) using image processing techniques.

FUZZY LOGIC SYSTEM

- Anushree M, IV CSE

Fuzzy means uncertain, indefinite, vague, or unclear. Fuzzy logic is a computing technique that is based on the degree of truth. A fuzzy logic system uses the input's degree of truth and linguistic variables to produce a certain output. The state of this input determines the nature of the output.This technique is different from Boolean logic, which uses only two categories (true or false).

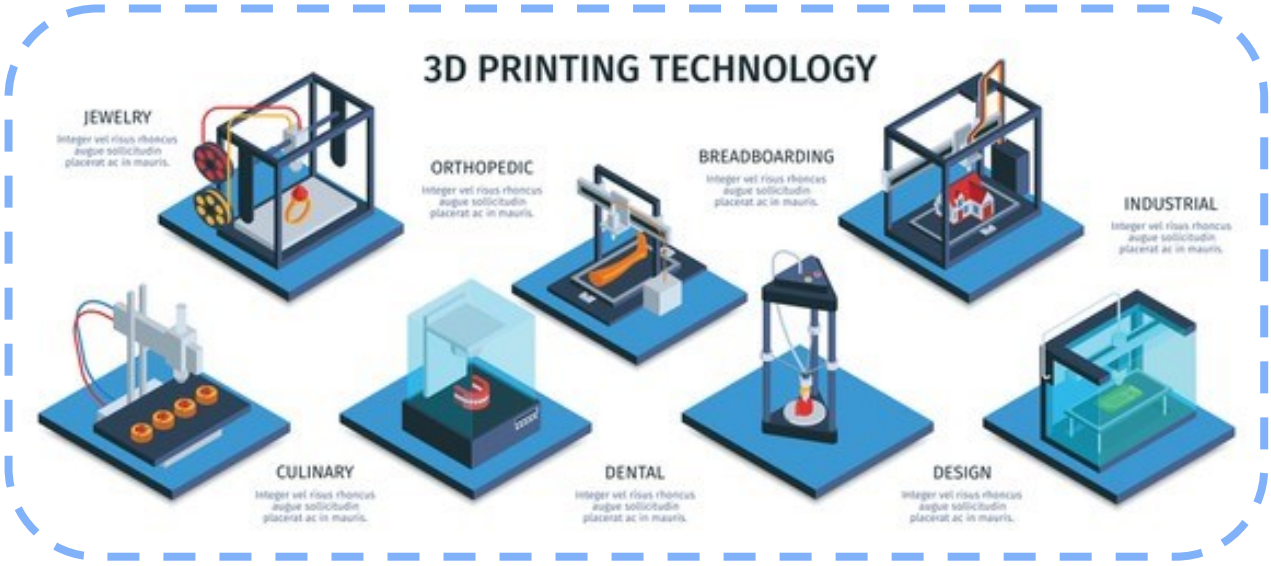
The inventor of fuzzy logic, Lotfi Zadeh, observed that unlike computers, human decision making includes a range of possibilities between YES and NO, such as : certainly yes, possibly yes, cannot say, possibly no, certainly no. Basically, it can be implemented in systems with various sizes and capabilities. That should range from small microcontrollers to large. Also, it can be implemented in hardware, software, or a combination of both in artificial intelligence.

Fuzzy logic provides an alternative way to represent linguistic and subjective attributes of the real world in computing. It is able to be applied to control systems and other applications in order to improve the efficiency and simplicity of the design process.

3D PRINTING TECHNOLOGY

- Ackshaya R. , IV CSE

This presentation topic covers about the 3D printing techniques ,how it works and their application. 3-D (three dimensions) describes an image that provides the perception of depth. It is also called as ADDITIVE MANUFACTURING (AM).It is the construction of a 3D object from a CAD model or a digital 3D model and used to produce complex shapes or geometrics that are impossible to construct.3D printing is an additive process whereby layers of material are built up to create a 3D part. This is the opposite of subtractive manufacturing processes, where a final design is cut from a larger block of material.

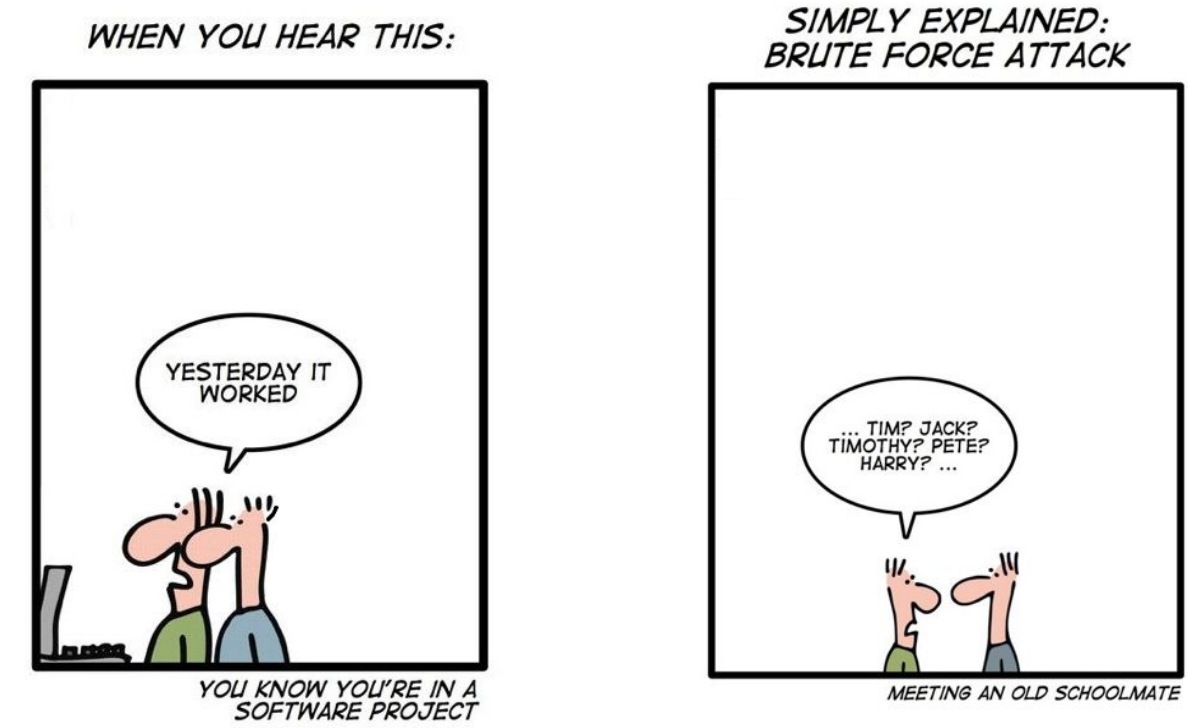


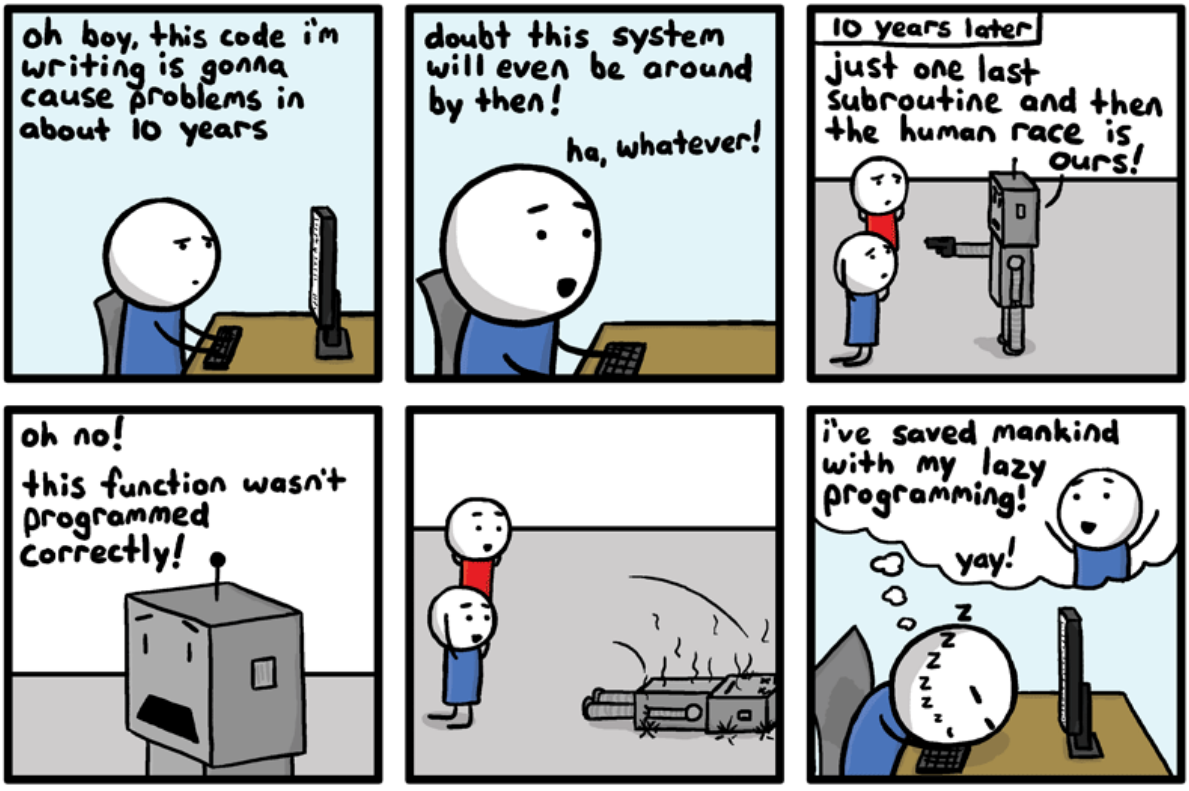
The paper gives example of some of the printing process and how it works . Also 3D printing is used in designing prototypes, education and architecture.

A typical 3D printer is very much like an inkjet printer operated from a computer. It builds up a 3D model one layer at a time, from the bottom upward, by repeatedly printing over the same area in a method known as fused depositional modelling (FDM). Working entirely automatically, the printer creates a model over a period of hours by turning a 3D CAD drawing into lots of two-dimensional, cross-sectional layers—effectively separate 2D prints that sit one on top of another, but without the paper in between. Instead of using ink, which would never build up to much volume, the printer deposits layers of molten plastic or powder and fuses them together (and to the existing structure) with adhesive or ultraviolet light.

For small production runs, prototyping, small business, and educational use, 3D printing is vastly superior to other industrial methods.

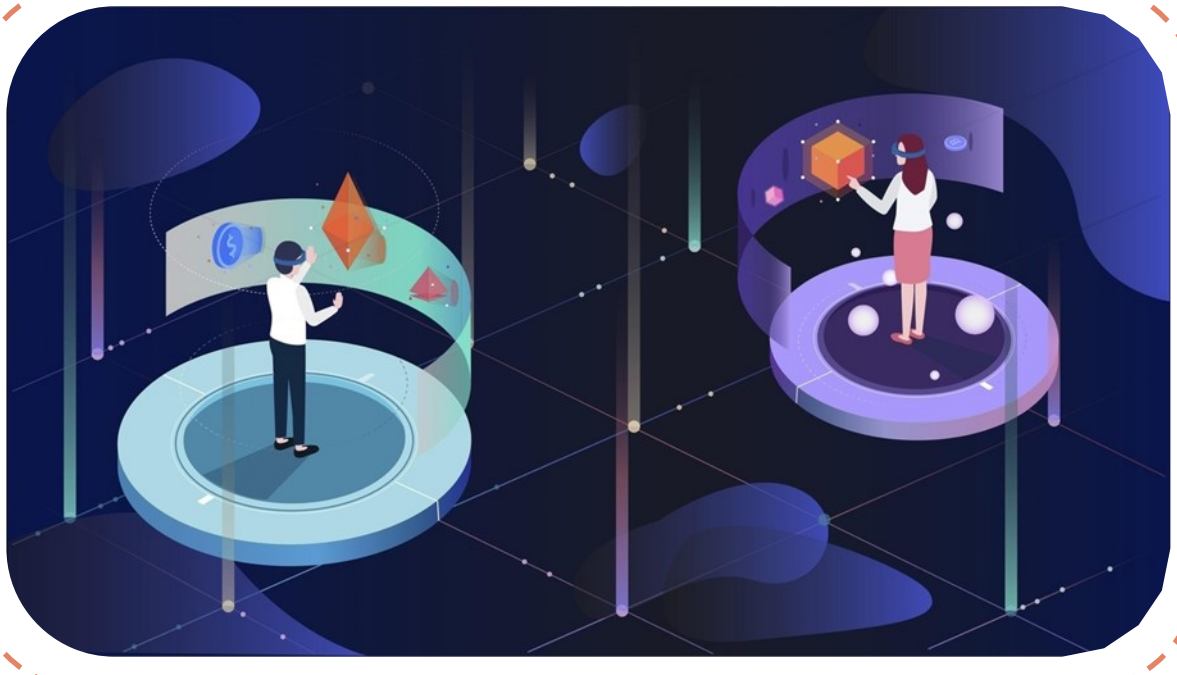
FUN ZONE


WHEN YOU HEAR THIS:
YESTERDAY IT WORKED
YOU KNOW YOU'RE IN A SOFTWARE PROJECT
SIMPLY EXPLAINED: BRUTE FORCE ATTACK
... TIM? JACK? TIMOTHY? PETE? HARRY? ...
MEETING AN OLD SCHOOLMATE


oh boy, this code i'm writing is gonna cause problems in about 10 years
doubt this system will even be around by then!
ha, whatever!
10 years later
just one last subroutine and then the human race is ours!
oh no!
this function wasn't programmed correctly!
i've saved mankind with my lazy programming!
yay!

METAVERSE

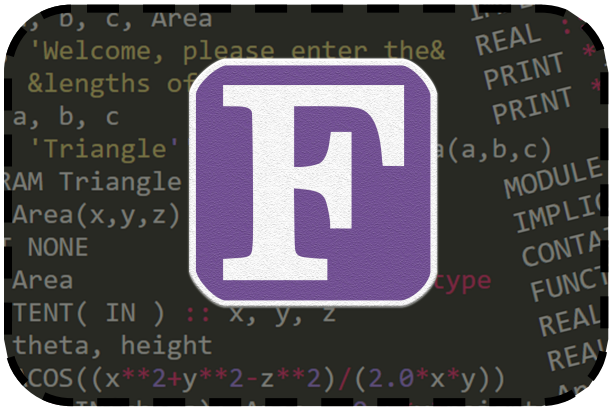
Mrs.M.Sumithra, AP, CSE



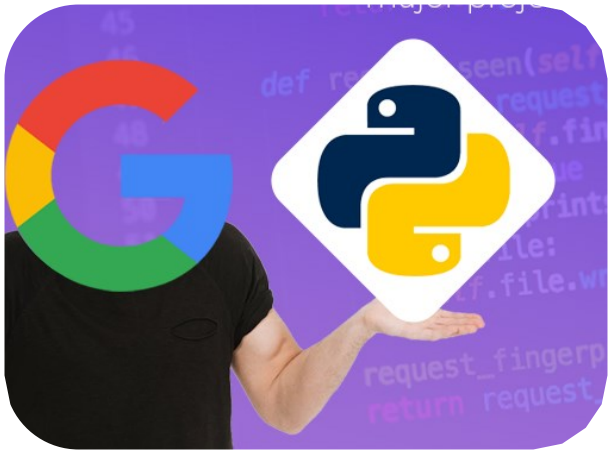
The metaverse is a concept of a persistent, online, 3D universe that combines multiple different virtual spaces. It would connect multiple platforms, similar to the internet containing different websites accessible through a single browser. The metaverse will allow users to work, meet, game, and socialize together in these 3D spaces. The connections between the financial, virtual, and physical worlds have become increasingly linked. The metaverse will be driven by augmented reality, with each user controlling a character or avatar. Besides supporting gaming or social media, the metaverse will combine economies, digital identity, decentralized governance, and other applications.

The term metaverse was coined by Neal Stephenson in a science fiction novel 'Snow Crash' in 1992, in which he envisioned lifelike avatars who met in realistic 3D buildings and other virtual reality environments. The digital economy is also growing in Metaverse. Now an individual can create, buy, and sell goods. And, in the more idealistic visions of the metaverse, it's interoperable, allowing you to take virtual items like clothes from one platform to another. Non-Fungible Tokens (NFTs) figure to play a big role in the usefulness and popularity of the metaverse. NFTs are a secure type of digital asset based on the same blockchain technology used by cryptocurrency. Instead of currency, an NFT can represent a piece of art, a song or digital real estate. An NFT gives the owner a kind of digital deed or proof of ownership that can be bought or sold in the metaverse. Thus, metaverse is a network of 3D virtual worlds focused on social connection and it can be defined as a simulated digital environment that uses augmented reality (AR), virtual reality (VR), and blockchain, along with concepts from digital media, to create spaces for rich user interaction mimicking the real world.

The first programming language was called FORTRAN



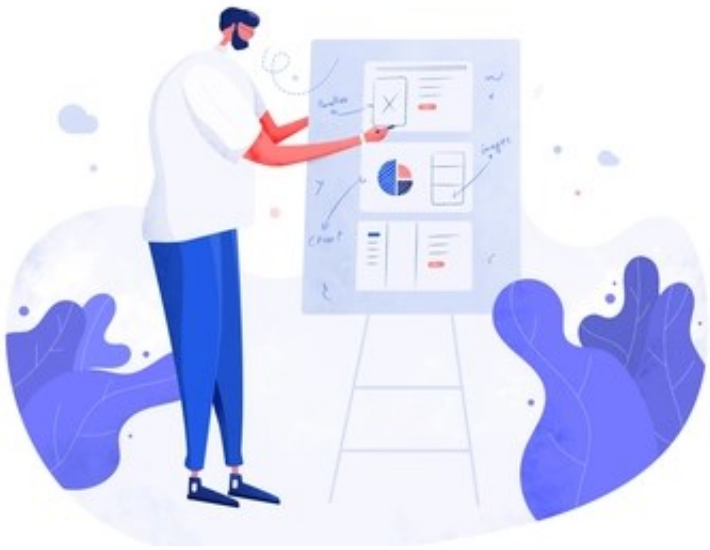
DID YOU KNOW?



Python is one the official programming languages of google

E CUBE WINNERS

YEAR	EVENT	POSITION	NAME
II	PAPER PRESENTATION	I	Aravind S
		II	Flavian Diol D
		III	Anudhina D
		IV	Srimathi T
		V	Aishwarya G
III	PAPER PRESENTATION	I	Dharshini.K
		II	Nikhileshwari.S
		III	Pavithra.M
		IV	Prathyush Krishnen.J
		V	Aditya.R
III	MINI PROJECT	I	Diksha Krishnan
		II	Dharshini.K
			Gayathri.S
			Jayashri.T
		III	Adithya.R
			Prathyush Krishnen.J
			Ramkumar.K



YEAR	EVENT	POSITION	NAME
IV	PAPER PRESENTATION	I	Srividhya Arunachalam
		II	M.Anusree
		III	G.Nishanthini
		IV	K.Praveen Kumar
		V	U.Aadithya
IV	PROJECT PLANNING	I	N.Sanjaykumar
			V.Santhosh,
			S.Sivamanikandan
		II	Anjali.A
			Sanghamithra R
		III	D.Divakar
			Hari kishan. J
			S Rahul

DEPARTMENT BULLETIN

Total number of students	57
Total number of students placed	49
Total percentage of students placed	85.96%

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Your feedback is appreciated !

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