

Department of Computer Science Engineering



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 **THE** Leaflet

NEWS
LETTER

Principal's Message



Dear Parents and Students,

It is with great pleasure that I welcome you to our College (DIET) Newsletter. As Principal I am hugely impressed by the commitment of the college and the staff in providing an excellent all-round education for our students with our state of the art facilities. We, as a team working together, strongly promote the zeal towards academic achievement among our students. The cultural, sporting, and other successes of all our students and staff are also proudly celebrated together.

I congratulate the staff and students who brought the latest technologies and concepts onto the day-to-day teaching-learning platform. As long as our ideas are expressed and thoughts kindled we can be sure of learning, as everything begins with an idea.

I appreciate every student who shared the joy of participation in co-curricular and extracurricular activities along with their commitment to the curriculum. That little extra we do is the icing on the cake. 'Do more than belong -participate .Do more than care - help. Do more than believing - practice. Do more than be fair-be kind. Do more than forgive - forget. Do more than dream - work.'

With a long and rewarding history of achievement in education behind us, our DIET community continues to move forward together with confidence, pride, and enthusiasm. hope you enjoy your visit to the website and should you wish to contact us, please find details at the www.diet.ac.in

**Yours in Education
Dr.Ravi Kadiyala
Principal**

HOD'S

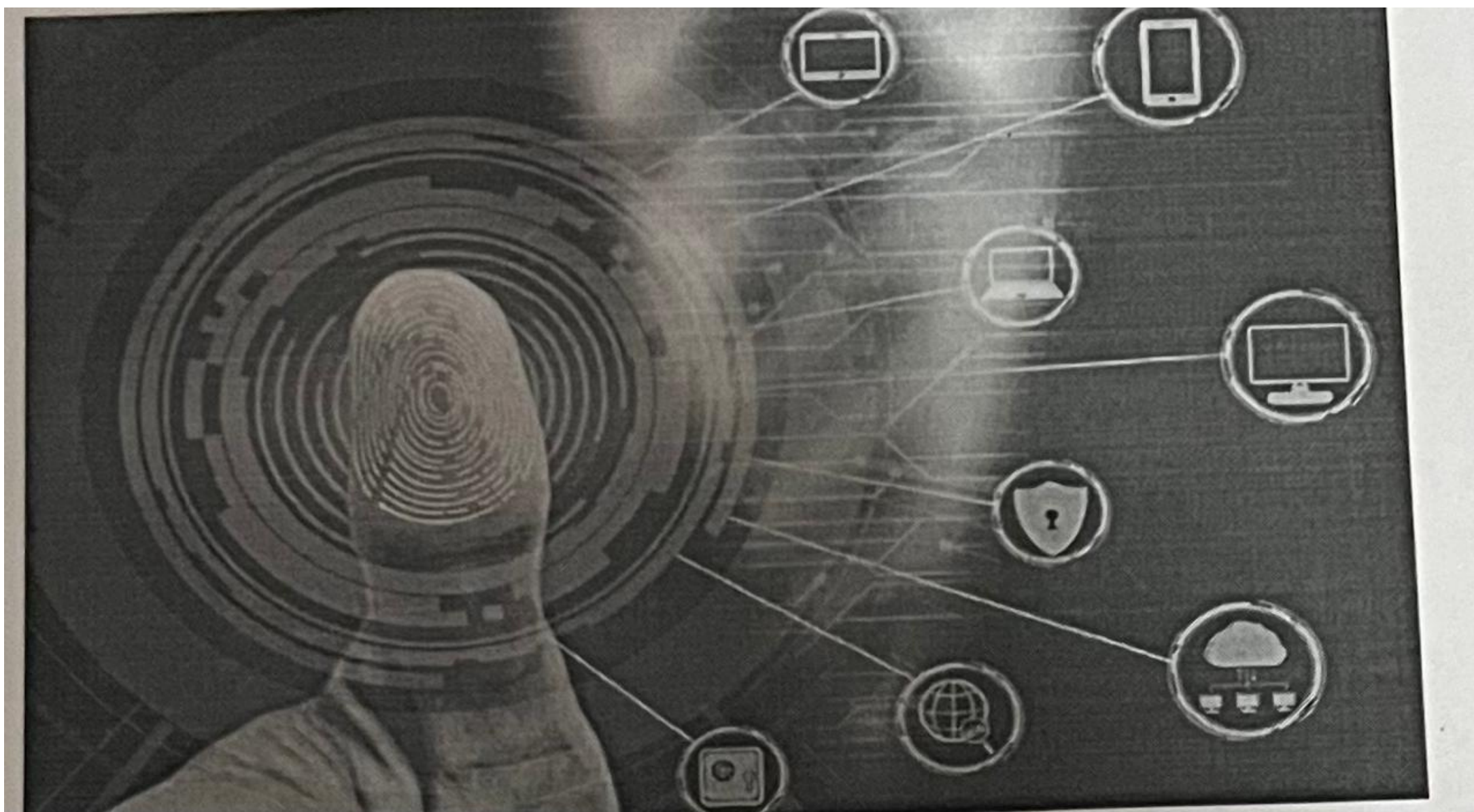


Dr. S. Suresh Professor & HOD, Computer Science and Engineering

It gives me a great pleasure to congratulate the staff and students of the Department of Computer Science and Engineering for the publication of the newsletter “Tech Vivids -Insights of CSE”. This newsletter mirrors the professional and academic achievements of faculty and students which would lead them to the overall development of their personality in the globalised world. Our effort would definitely create an impact in the minds of readers, by providing larger visibility and dimension. “Perseverance will always lead to diligence”, with this in mind the department aims at quality teaching by exploring divergent events. The department motivates the students to improve their knowledge by organizing and participating in various events. This is only a small step towards a long journey to achieve progress. On our way towards reaching the objectives we may have face numerous milestones. I hope “Tech Vivids- Insights of CSE” would enlighten us with hope, confidence and faith in the journey ahead I congratulate the editorial board for the publication of the newsletter.

STUDENTS ARTICLES

Biometric Authentication



Biometrics comes from the words bio meaning Life and matron meaning Measurement. It is therefore the identification /authentication by use of measurement of some unique traits of the user. So the process of validation of user to sign in to the account or getting access to personal data etc. by using the unique characteristics of user i.e. fingerprint scan, facial imaging, signature, voice recognition, is the Biometric Identification. Verification of Identity occurs when the user is already registered or users data is already enrolled in the system software.

1. The person needs not to carry any identity card or remember any passwords or login-ids.
2. The person in regard needs to be present at the point of time and place, the system is one to one interface, so more secure.
3. Biometric authentication can be classified into two classes of identification schemes:
4. A. Behavioral characteristics
5. B. Physiological characteristic

Classification of biometrics:

Eye Scanning: The user has to look in a device that performs laser-scanning of his retina. The device analyzes the configuration of blood vessels of the user.

Face Recognition In face recognition, a good resolution simple camera or a web camera is used. Facial recognition in visible light acquires features from the central portion of face image.

Palm print Recognition

Features like minutiae, ridges, principle lines, creases, orientation, and vein geometry are extracted for recognition. For different individuals, vein geometry is distinct. For authentication, hand is placed on the screen, infrared light is used for scanning of the veins.

DNA Analysis

This Method of verification is mostly used in criminal cases. DNA of the user in the form of blood, tissue, hair, nails is collected for confirming. DNA analyzing takes time. DNA also is unique characteristic but a hair or nail can be stolen.

Voice Verification

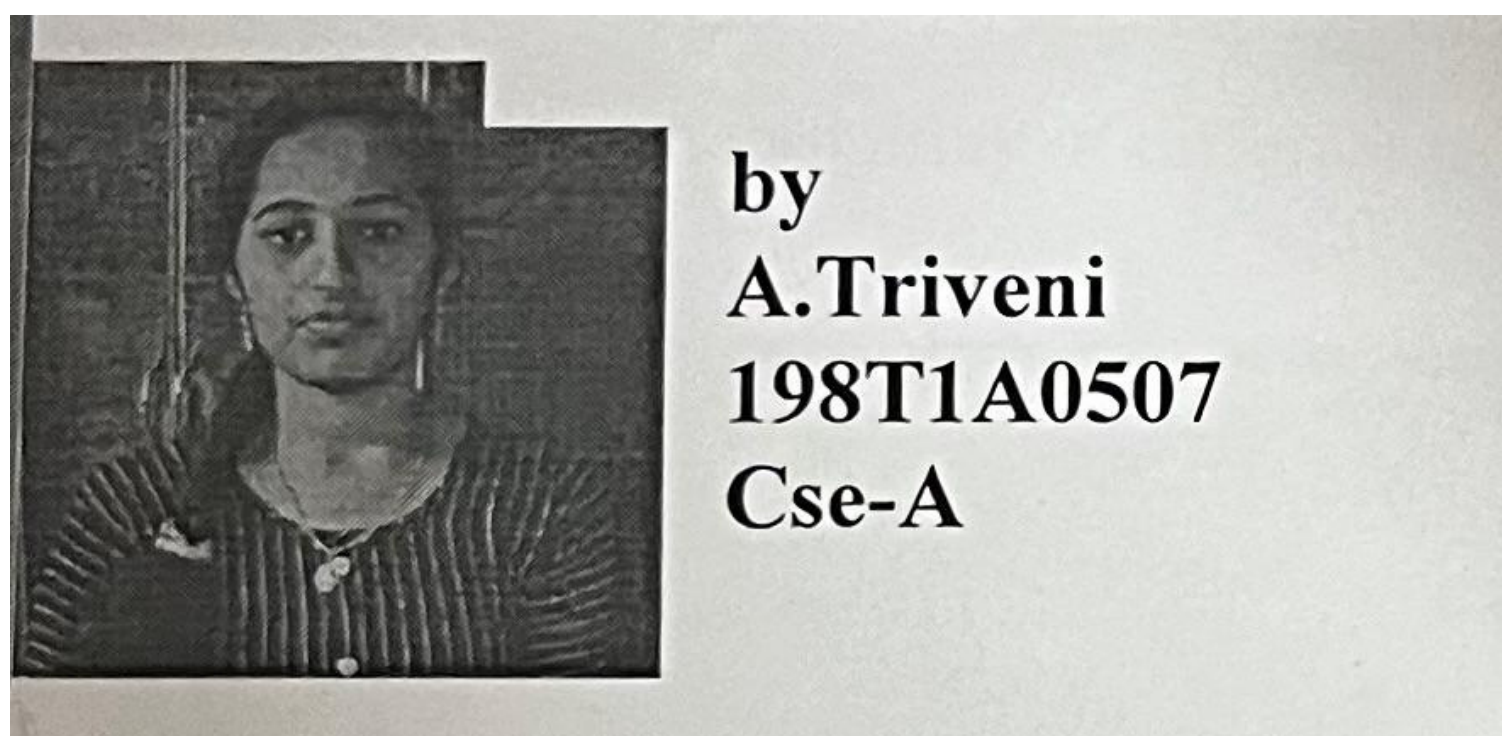
In voice verification, user is asked to speak a phrase or a secret code. His vocal characteristics are measured i.e. both physiological (shape and size of vocal cords) and behavioural (pitch of voice) characteristics.

Signature scanning

It is the dynamic analysis of the shape, size of signature, writing speed, time taken for signing, pressure applied by user's hand on the screen while signing etc. Though signature may be copied but the traits while signing may not be.

The biometric system may find applications in attendance system, security systems, and identification purposes and may find even more applications in the time to come. The prevalent systems would be worked upon and modified for error free secure system. The accuracy levels need to be increased for efficient security system.

Proper selection of technique has to be considered according to the requirement. Scientific work is being carried out for future applications and progress in the biometrics.



WHITE COLLAR CRIME

The term white-collar crime is now synonymous with the full range of frauds committed by business and government professionals. These crimes are characterized by deceit, concealment, or violation of trust and are not dependent on the application or threat of physical force or violence. The motivation behind these crimes is financial-to obtain or avoid losing money, property, or services or to secure a personal or business advantage.

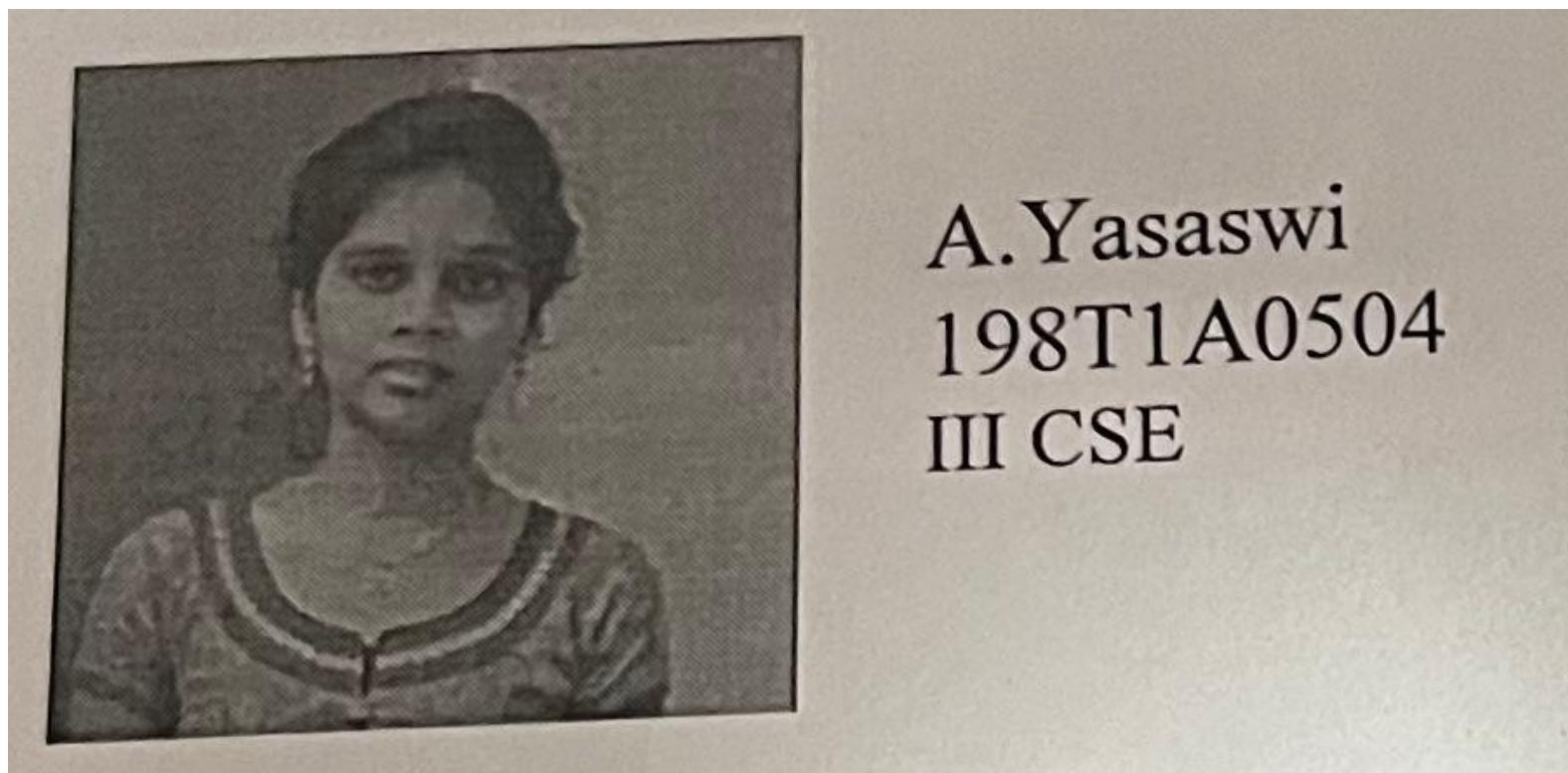
The FBI's white-collar crime work integrates the analysis of intelligence with its investigations of criminal activities such as public corruption, money laundering, corporate fraud, securities and commodities fraud, mortgage fraud, financial institution fraud, bank fraud and embezzlement, fraud against the government, election law violations, mass marketing fraud, and health care fraud. The FBI generally focuses on complex investigations-often with a nexus to organized crime activities that are international, national, or regional in scope and where the FBI can bring to bear unique expertise or capabilities that increase the likelihood of successful investigations.



The FBI's corporate fraud investigations primarily focus on the following activities:

Falsification of financial information:

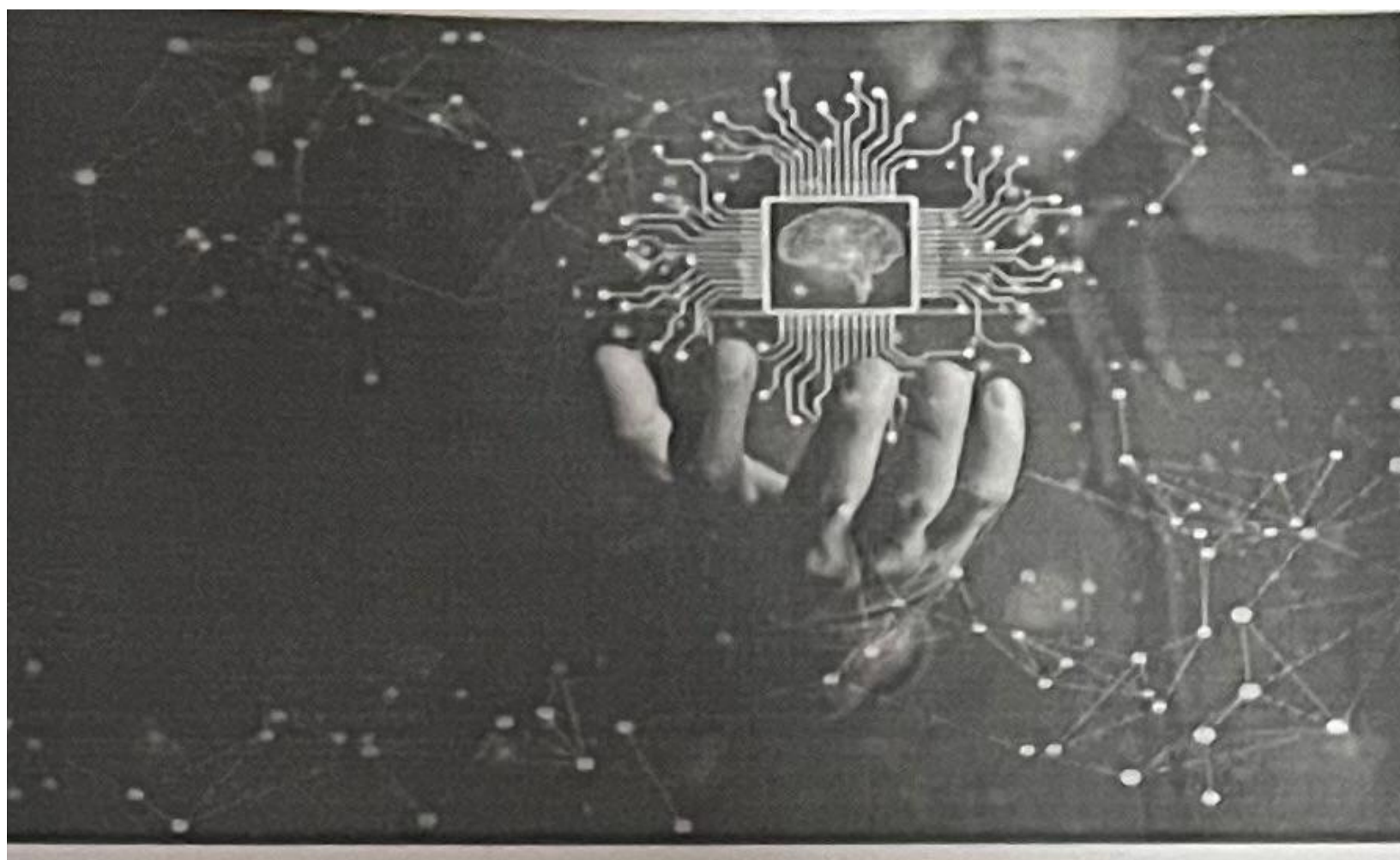
- False accounting entries and/or misrepresentations of financial condition;
- Fraudulent trades designed to inflate profits or hide losses; and Self-dealing by corporate insiders:
- Insider trading (trading based on material, non-public information);
- Misuse of corporate property for personal gain; and
- Individual tax violations related to self-dealing.



ARTIFICIAL INTELLIGENCE

- What is Artificial Intelligence (AI)?

Artificial intelligence (AI) broadly refers to any human-like behavior displayed by a machine or system. In AI's most basic form, computers are programmed to "mimic" human behavior using extensive data from past examples of similar behavior. This can range from recognizing differences between a cat and a bird to performing complex activities in a manufacturing facility. AI is very broad term used to describe any system that can perform tasks that usually require the intelligence of a human. Machine Learning (ML) is a subset of Artificial Intelligence (AI) where as the Deep Learning (DL) is a subset of Machine Learning (ML) algorithms.



How Artificial Intelligence (AI) works?

Artificial Intelligence (AI) systems work by combining large sets of data with intelligent, iterative processing algorithms to learn from patterns and features in the data that they analyze. Each time an AI system runs a round of data processing, it tests and measures its own performance and develops additional expertise.

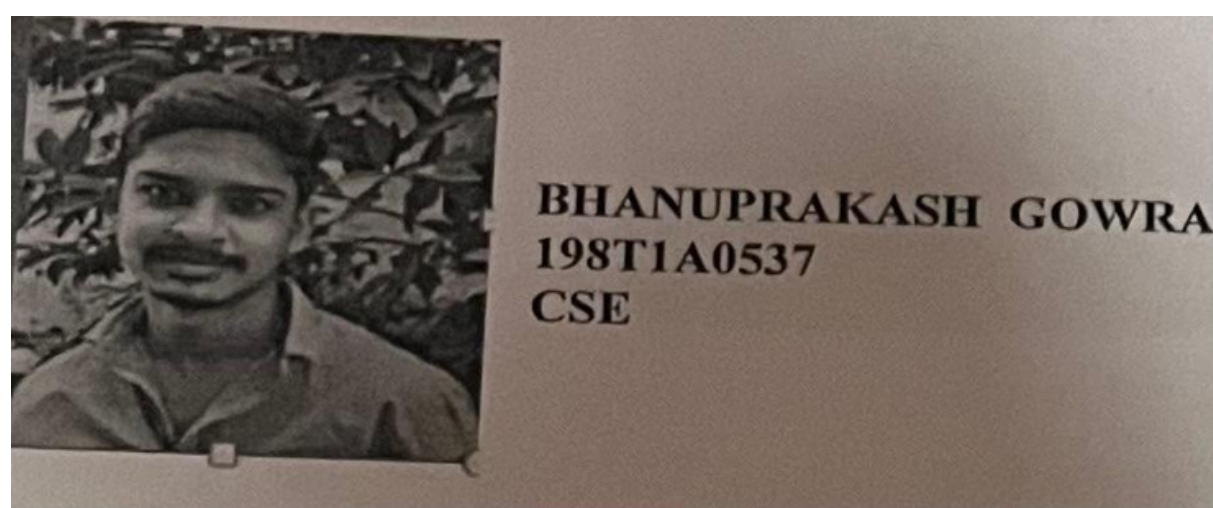
Because AI never needs a break, it can run through hundreds, thousands, or even millions of tasks extremely quickly, learning a great deal in very little time, and becoming extremely capable at whatever it's being trained to accomplish. But the trick to understanding how AI truly works is understanding the idea that AI isn't just a single computer program or application, but an entire discipline, or a science. The goal of AI science is to build a computer system that is capable of modeling human behavior so that it can use human-like thinking processes to solve complex problems. To accomplish this objective, AI systems utilize a whole series of techniques and processes, as well as a vast array of different technologies.



Understanding Artificial Intelligence (AI)

When most people hear the term artificial intelligence, the first thing they usually think of is robots. That's because big-budget films and novels weave stories about human-like machines that wreak havoc on Earth. But nothing could be further from the truth. Artificial intelligence (AI) is based on the principle that human intelligence can be defined in a way that a machine can easily mimic it and execute tasks, from the most simple to those that are even more complex. The goals of artificial intelligence include mimicking human

cognitive activity. Researchers and developers in the field are making surprisingly rapid strides in mimicking activities such as learning, reasoning, and perception, to the extent that these can be concretely defined. Some believe that innovators may soon be able to develop systems that exceed the capacity of humans to learn or reason out any subject. But others remain skeptical because all cognitive activity is laced with value judgments that are subject to human experience.



Deep Learning

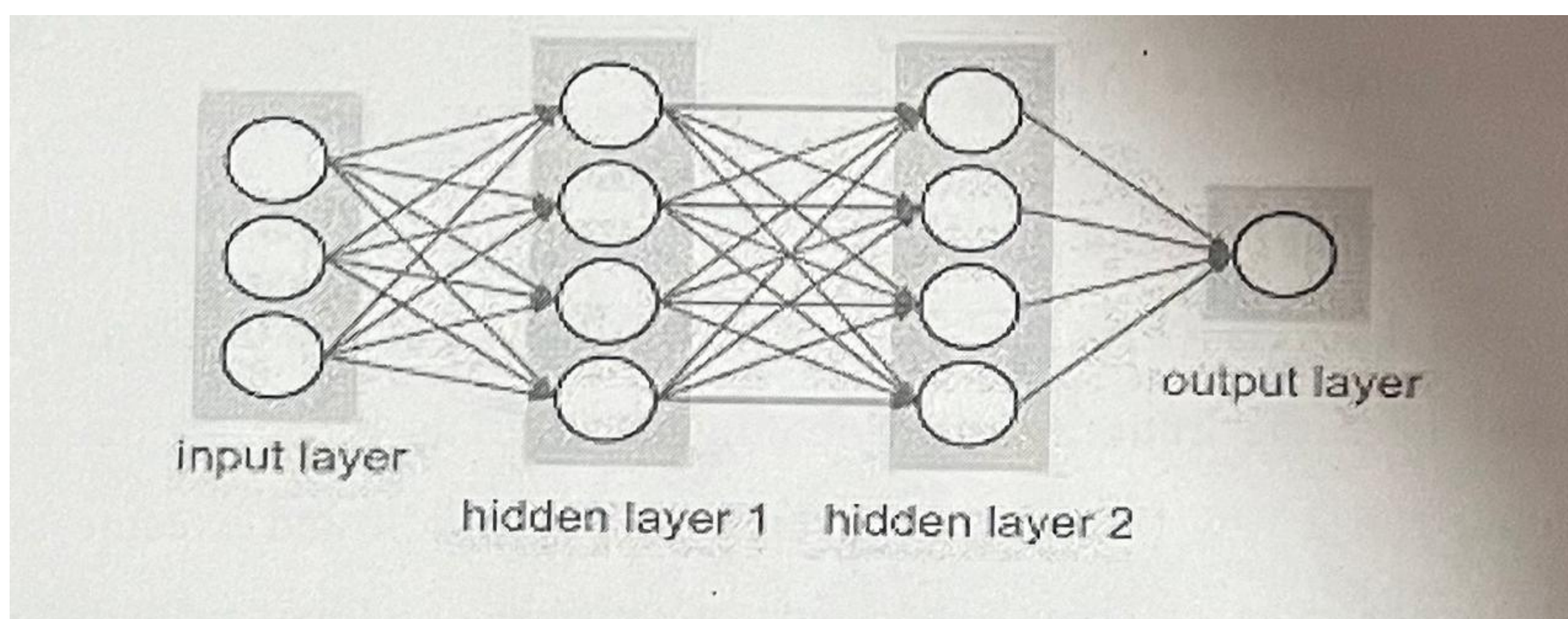
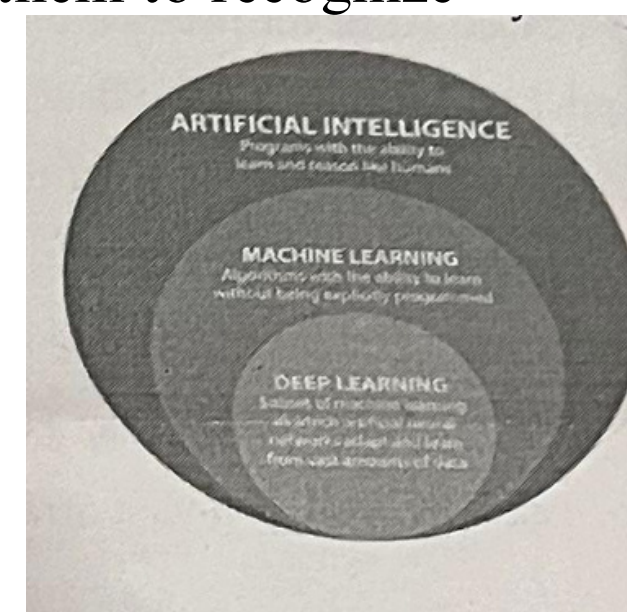
Deep learning is a machine learning technique that teaches computers to do what comes naturally to humans: learn by example. Deep learning is a key technology behind driverless cars, enabling them to recognize a stop sign, or to distinguish a pedestrian from a lamppost. It is the key to voice control in consumer devices like phones, tablets,

TVs, and hands-free speakers. Deep learning is getting lots of attention lately and for good reason.

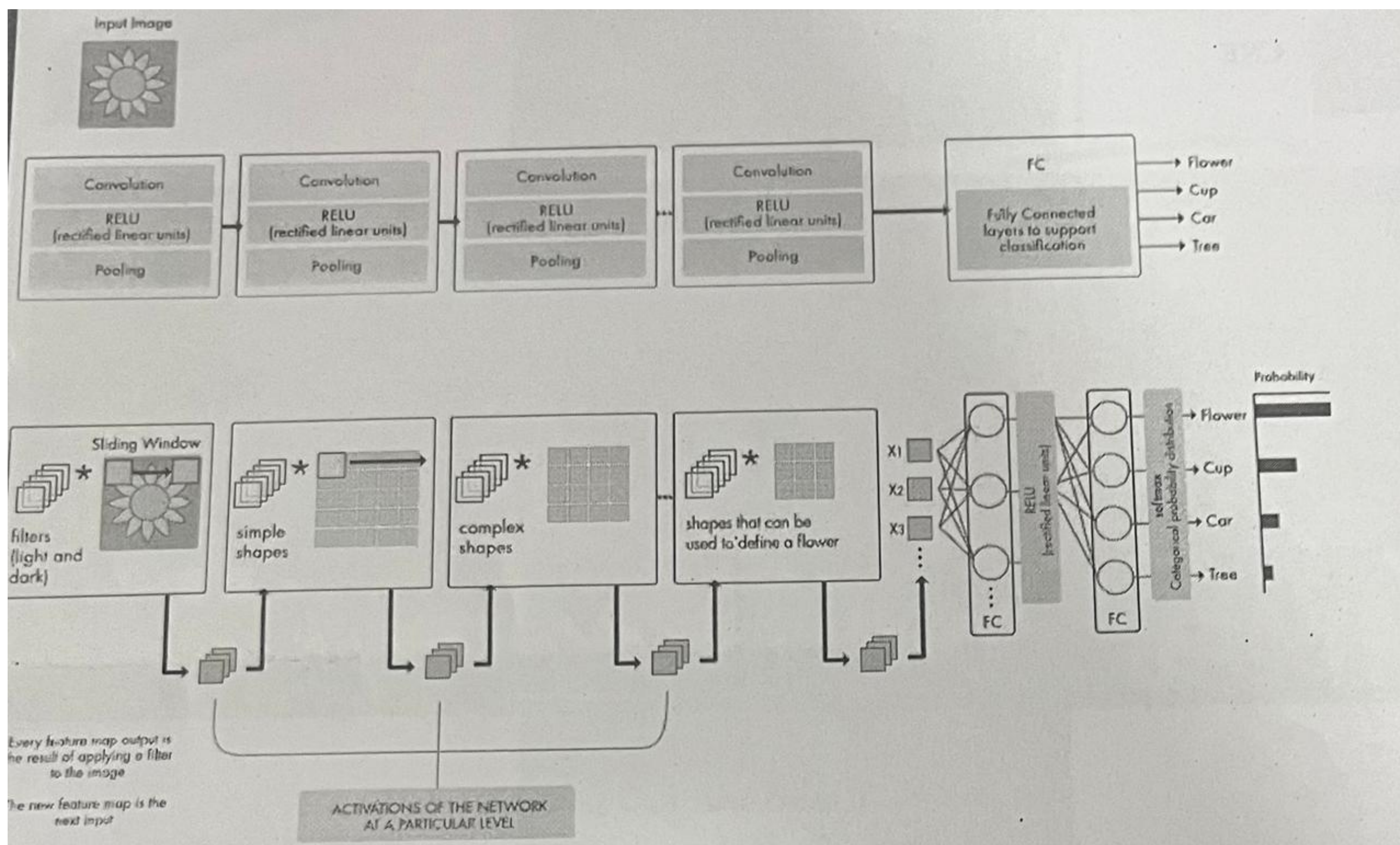
It's achieving results that were not possible before. In deep learning, a computer model learns to perform classification tasks directly from images, text, or sound. Deep learning models can achieve state-of-the-art accuracy, sometimes exceeding human-level performance. Models are trained by using a large set of labeled data and neural network architectures that contain many layers.

How Deep Learning Works

Most deep learning methods use neural network architectures, which is why deep learning models are often referred to as deep neural networks. The term "deep" usually refers to the number of hidden layers in the neural network. Traditional neural networks only contain 2-3 hidden layers, while deep networks can have as many as 150. Deep learning models are trained by using large sets of labeled data and neural network architectures that learn features directly from the data without the need for manual feature



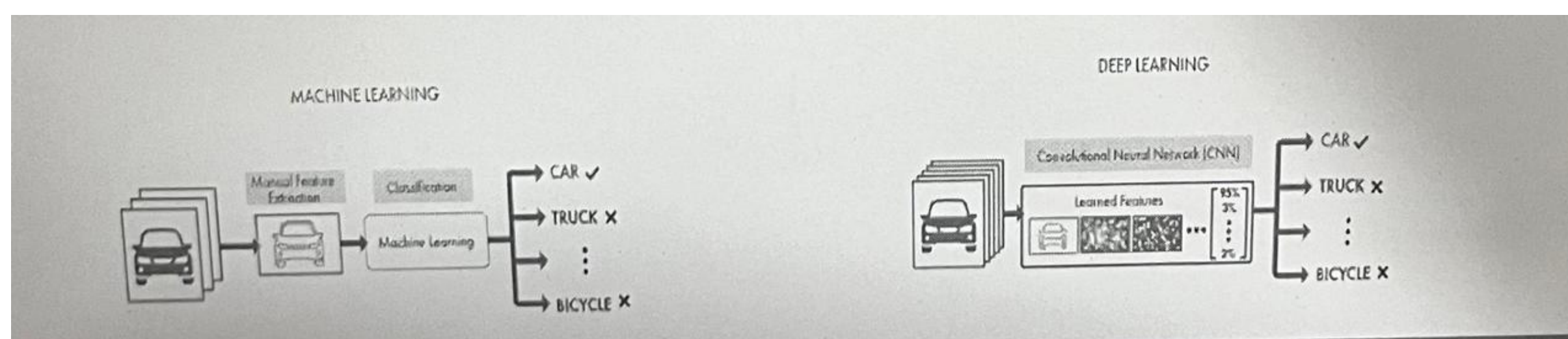
One of the most popular types of deep neural networks is known as convolutional neural networks (CNN or ConvNet). A CNN convolves learned features with input data, and uses 2D convolutional layers, making this architecture well suited to processing 2D data, such as images. CNNs eliminate the need for manual feature extraction, so you do not need to identify features used to classify images. The CNN works by extracting features directly from images. The relevant features are not pretrained; they are learned while the network trains on a collection of images. This automated feature extraction makes deep learning models highly accurate for computer vision tasks such as object classification.



CNNs learn to detect different features of an image using tens or hundreds of hidden layers. Every hidden layer increases the complexity of the learned image features. For example, the first hidden layer could learn how to detect edges, and the last learns how to detect more complex shapes specifically catered to the shape of the object we are trying to recognize.

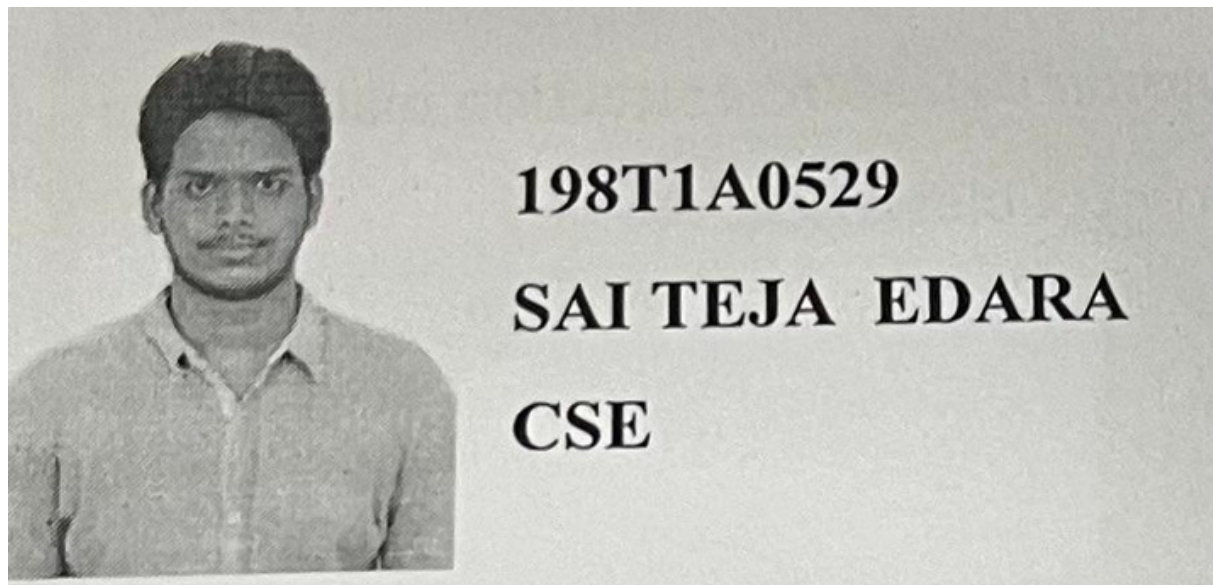
What's the Difference Between Machine Learning and Deep Learning

Deep learning is a specialized form of machine learning. A machine learning workflow starts with relevant features being manually extracted from images. The features are then used to create a model that categorizes the objects in the image. With a deep learning workflow, relevant features are automatically extracted from images. In addition, deep learning performs "end-to-end learning" - where a network is given raw data and a task to perform, such as classification, and it learns how to do this automatically.

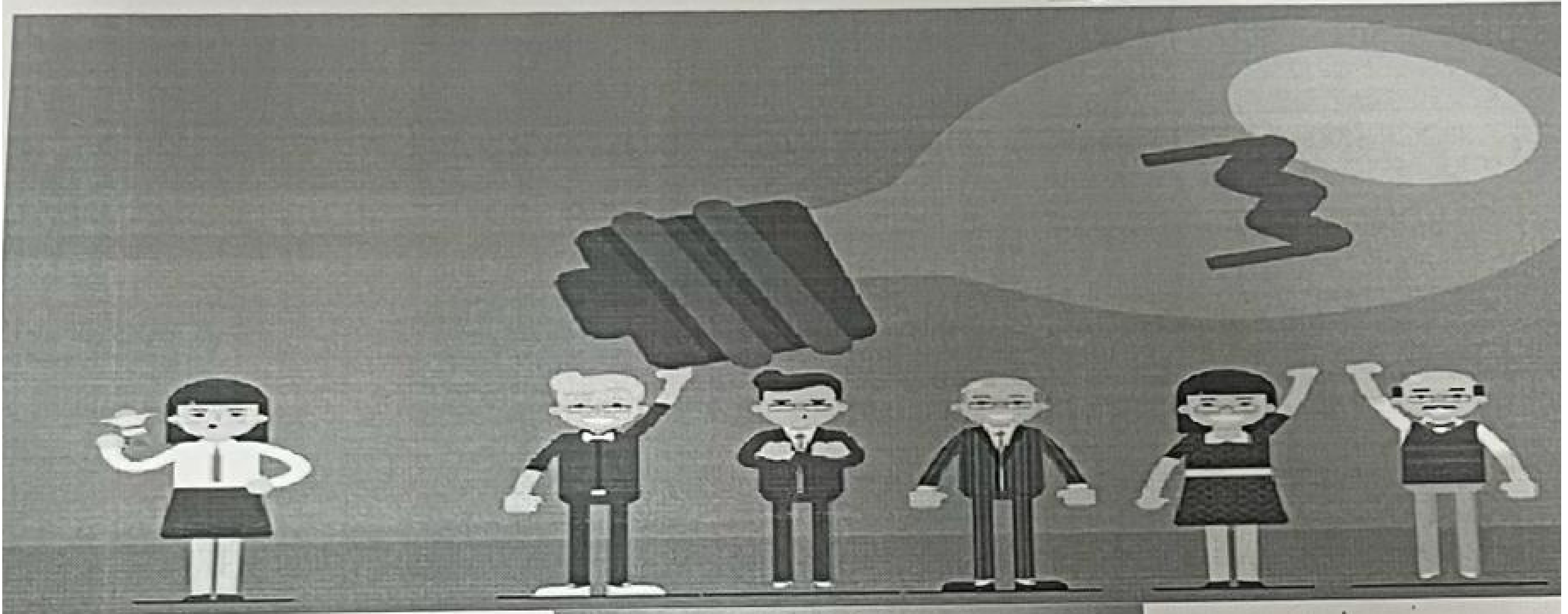
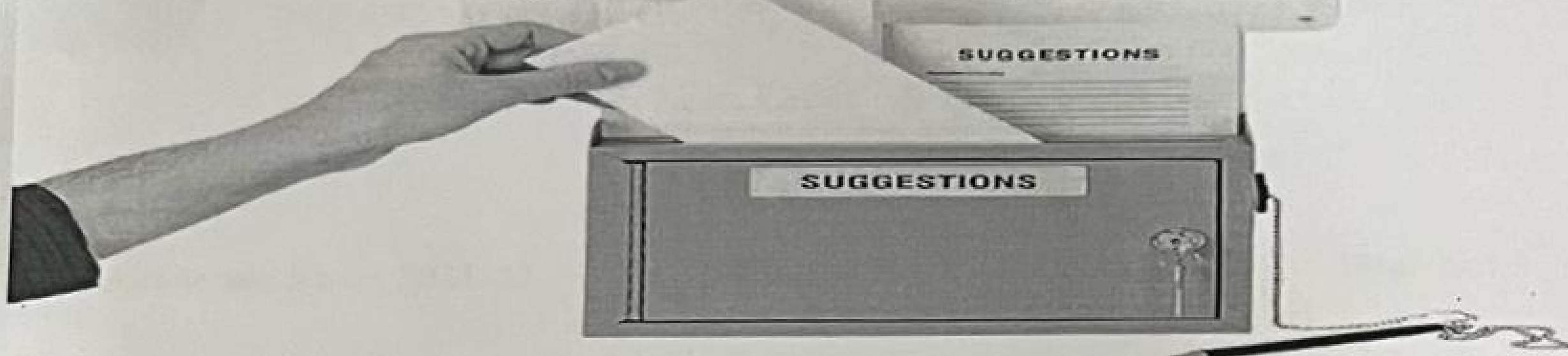


Another key difference is deep learning algorithms scale with data, whereas shallow learning converges.

Shallow learning refers to machine learning methods that plateau at a certain level of performance when you add more examples and training data to the network. A key advantage of deep learning networks is that they often continue to improve as the size of your data increases.



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