



SRM Institute of Science and Technology
Ramapuram campus
Chennai 89.

Webinar

Department of Electrical and Electronics Engineering

Presents

Artificial Intelligence and Machine Learning for Electrical and Electronics Applications

28.05.2020
2 PM TO 4 PM.

SPEAKERS:

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Audience: +2 And Final Year EEE Diploma students

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- **What is AI?**
- **Importance of AI**
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- **Neural Networks and Deep Learning**
- **General Architecture**
- **Brain Tumor Detection using CNN**

1.Origin of AI 1950

Alan Turing published a landmark paper in which he speculated about the possibility of creating machines that think.

1951

John McCarthy: AI is a science and Engineering of making intelligent machines. In other words AI is the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision making and translation between languages.

2.Why AI important

1. It automates repetitive learning
2. AI adapts through progressive learning algorithm—classifier or projector, game play, what product recommend
3. It analysis more and deeper data using NN- more hidden layer, DL has more no. of hidden layer, more data you feed them , more accurate they will be.
4. AI achieves incredible accuracy- find cancer, tumor with accuracy, radiologist.

3.Applications of AI

- Sports : Deep Blue- IBM- Is the first computer designed in 1996 to played against world chess champion Garry Kasparov and defeated him in chess game one of a six game match. Now a days chess games are available in your mobile and PC faster than the Deep blue.
- AI for Rescue- mission-health, find victims faster, in natural disaster, Life and death for victims. Texas A&M university computer program developed AI and find missing people in under 2 hour.
- Wildlife Prevention—Hunting of WL is global problem, Uganda's queen Elisabeth national park uses detective modelling to protect from poachers.

- AI in Agriculture- model of soil to crop yield, predicts the variable that could affect the future yields.eg BEAT has developed DL based algorithm called plantrix- identify the nutrients defects in the soil.
- Health care-surgical Robo, reducing medical cost in advance, robotic arms,
- Wild life population- eco system , migration

4.Domains of AI

- Neural Network
- Robotics
- Expert systems- it is the computer program that uses AI technology to emulate the decision making ability of the judgement of a system in a organization
- Fuzzy Logic- Boolean logic, true or false, solution to problem in all field
- NLP-Natural Language processing

5.Types of AI

- Narrow AI – designed for one particular task, SIRI,Alexa, weak AI,not inefficient,replace routine human job both physical and cognitive
- Broad AI /Wide ai- Has cognitive ability i.e system with unfamiliar task is enough to find the solution.Intelligence in variety of behaviour, eg driving of car, telling a joke , has risk analysis and other cognitive progresses.

6. Languge

- Python
- R language
- Java
- Lisp-oldest most suited for development of ai, by john mccarthy
- Prolog-pattern matching,back tracking, medical
- C++
- Java script

7. Job profile in AI

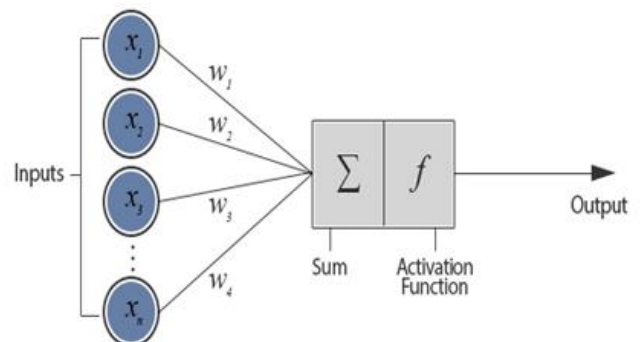
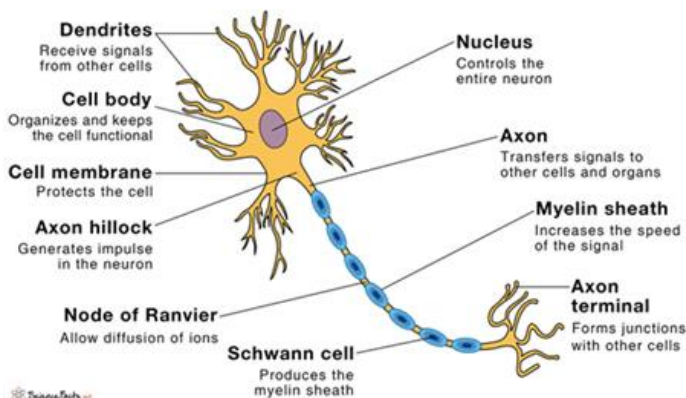
- ML Engineers
- Data scientists- different data, video processing, speech processing, medicine simulation
- AI Intelligence engineers
- Business intelligence developer—research, high demand
- Big data engineering/architecture

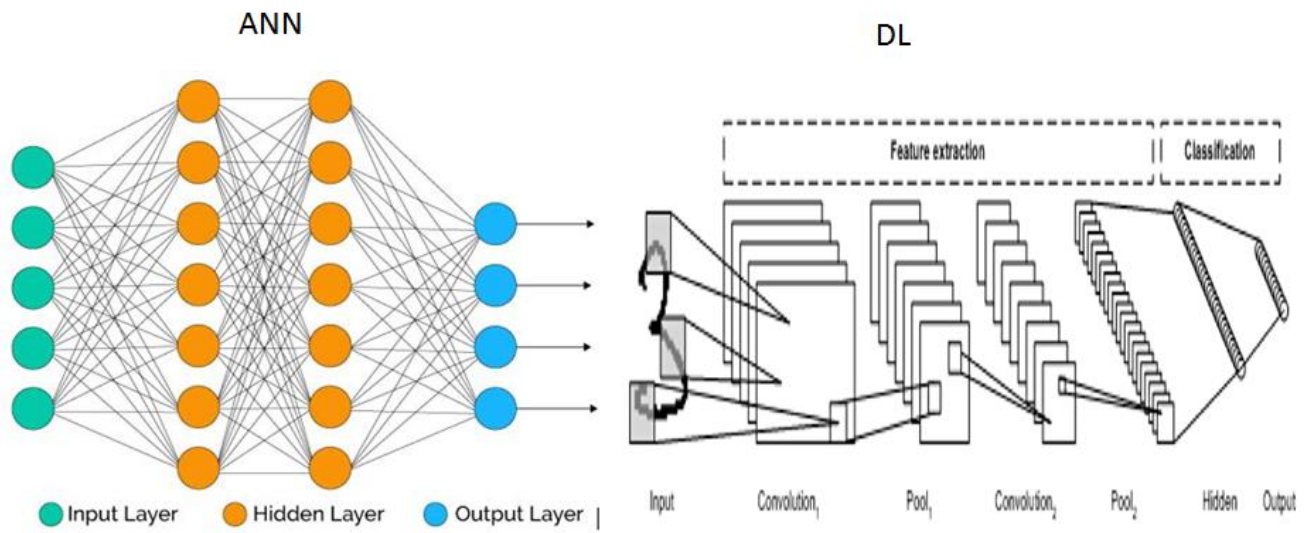
8. Company

- Dropbox
- Adobe
- IBM
- LinkedIN
- Redhat
- Uber
- Walmart

9. Neural Networks and Deep Learning

- Neural networks, a beautiful biologically-inspired programming paradigm which enables a computer to learn from observational data





Block diagram of Brain tumor using CNN Classifiers

