



**ACS** College of Engineering  
Approved by AICTE New Delhi, Affiliated to VTU, Belagavi  
(A Unit of RajaRajeswari Group of Institutions)  
CET Code : E186 COMED-K : E003 PGGET : T918



**Department of Biomedical Engineering**

**In collaboration with FICE**

**Intel Intelligent Systems Labs**

**Webinar on “Artificial Neural Networks and Image processing using TensorFlow”**

**Open for students of ACS COLLEGE OF  
ENGINEERING**

**Resources Person: MOHAMMED AMEER, SME, FICE**



About FICE:

FICE promotes market-relevant education and strives to create a coherent innovation and entrepreneurship oriented ecosystem for all.

About Resource Person:

A highly skilled experienced tech professional in the field of Internet of Things and Artificial Intelligence. Ameer is an innovative professional with years of experience in tech solution development, content curation and content delivery around IoT and AI. He has delivered enormous number of tech sessions, webinars and workshops to varied set of audience. Over the years he has conducted more than 200 workshops covering pan India catered to more than 8000 participants on various technologies. He has mentored various projects around IoT, computer vision, automation and AI. Ameer Lives in Bangalore.

ABOUT EVENT:

Internet of Things is a network of physical objects —or “things”. It connects and exchanges data with other devices and systems over the Internet. Essentially, it is a system of interrelated, internet-connected objects that can collect and transfer data over a wireless network without human intervention and allows us easy control over our devices, appliances, and equipment.

IoT (as “Internet of Things” is shortened) has made it possible for devices to relay information to one another. It takes multiple devices and connects them to a cellular network connection. Such connected devices (like security cameras, GPS tracking, retail POS machines, etc.) are considered a part of an IoT network as they communicate back and forth with a central hub. SIM cards and radio technology in devices enable this connection and communication, opening up endless possibilities for technological solutions. The history of the Internet of Things allows us to see just some of these infinite possibilities come to fruition. And, as all history does, it also enables us to hypothesize where it will take us in the future.

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

The ideal characteristic of artificial intelligence is its ability to rationalize and take actions that have the best chance of achieving a specific goal. A subset of artificial intelligence is machine learning which refers to the concept that computer programs can automatically learn from and adapt to new data without being assisted by humans. Deep learning techniques enable this automatic learning through the absorption of huge amounts of unstructured data such as text, images, or video.

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# Artificial Neural Network

*Geoffrey Hinton*

1. Feedforward Network
2. Backpropagation

AI - 1950's  
ML - 1958

Head of Google Brain

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## Neurons

Simple Neural Network

Deep Learning Neural Network

● Input Layer ● Hidden Layer ● Output Layer

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### Artificial Neuron - Perceptron

1. Inputs - Pixel
2. Weights - Random
3. Bias
4. Activation Function
5. Output

Matrix Multiplication between Input values and Weights

Weights and Biases are trainable parameters

$$f\left(b + \sum_{i=1}^n x_i w_i\right)$$

An example of a neuron showing the input ( $x_1, x_2, \dots, x_n$ ), their corresponding weights ( $w_1, w_2, \dots, w_n$ ), a bias ( $b$ ) and the activation function  $f$  applied to the weighted sum of the inputs.

Ms. Nanditha Krishna

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Ms. Nanditha Krishna

SANIA ALI KHAN

### Artificial Neuron - Perceptron

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#### Participants

Invite someone or dial a number

Share invite

- FA Faisal Ahmed (Guest)
- GA G F AYESHA
- G G.ABHISHEK
- JS JEEVITHA S
- JR Jonathan Rajiv
- JG JYOTHI G

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colab.research.google.com/drive/1ZU... Id0o4420i... QeyR3c5lfc-uFFCrmu?authuser=3#scrollTo=-SBbh7ahEhHx

+ Code + Text

```
True
```

```
a = np.zeros([300, 300, 3])
a[0:100, :] = [0, 0, 255] # BGR
a[100:200, :] = [0, 255, 0]
a[200:300, :] = [255, 0, 0]
cv2_imshow(a)
```

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Mohammed Ameer

12:15 PM 23-Jul-21

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extremetech.com/wp-content/uploads/2019/12/SONATA-hero-option1-764A5360-edit.jpg

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12:15 PM 23-Jul-21

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