# NEURAL NETWORKS AND DEEP LEARNING CST 395 CS 5TH SEMESTER HONORS COURSE- Dr Binu V P, 9847390760

CS 5th Semester Honors course for the Computer Science at KTU- Dr Binu V P

## Applications of Neural Netwok

September 06, 2022

**Speech Recognition**

Speech occupies a prominent role in human-human interaction. Therefore, it is natural for people to expect speech interfaces with computers. In the present era, for communication with machines, humans still need sophisticated languages which are difficult to learn and use. To ease this communication barrier, a simple solution could be, communication in a spoken language that is possible for the machine to understand.
Great progress has been made in this field, however, still such kinds of systems are facing the problem of limited vocabulary or grammar along with the issue of retraining of the system for different speakers in different conditions. ANN is playing a major role in this area. Following ANNs have been used for speech recognition

**Character Recognition -** The idea of character recognition has become very important as handheld devices like the Palm Pilot are becoming increasingly popular. Neural networks can be used to recognize handwritten characters.

**Human Face Recognition-**It is one of the biometric methods to identify the given face. It is a typical task because of the characterization of “non-face” images. However, if a neural network is well trained, then it can be divided into two classes namely images having faces and images that do not have faces.

**Image Compression -** Neural networks can receive and process vast amounts of information at once, making them useful in image compression. With the Internet explosion and more sites using more images on their sites, using neural networks for image compression is worth a look.

**Stock Market Prediction** - The day-to-day business of the stock market is extremely complicated. Many factors weigh in whether a given stock will go up or down on any given day. Since neural networks can examine a lot of information quickly and sort it all out, they can be used to predict stock prices.

**Traveling Saleman's Problem** - Interestingly enough, neural networks can solve the traveling salesman problem, but only to a certain degree of approximation.

**Medicine, Electronic Nose, Security, and Loan Applications** - These are some applications that are in their proof-of-concept stage, with the acception of a neural network that will decide whether or not to grant a loan, something that has already been used more successfully than many humans.

**Natural Language processing-**Natural Language Generation, Paraphrasing and Summarization of User Reviews with Recurrent Neural Networks, authors demonstrate a recurrent neural network (RNN) model that can generate novel sentences and document summaries.

**Image Processing**
Image processing using artificial neuronal networks (ANN) has been successfully used in various fields of activity such as geotechnics, civil engineering, mechanics, industrial surveillance, defence department, automatics and transport.CNN opens wide possibilities.

**Miscellaneous Applications** - These are some very interesting application areas of neural networks like self driving cars.Social Media,Marketing and sales,Personal Assistants, Healthcare etc..



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## Machine Learning Algorithm

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**DR.BINU V P-9847390760**

Associate Professor and Head Dept of Computer Science-IHRD Karunagappally.Love to share the thoughts and views .I play lot of Games and basically an Athlet in ...

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