

# Face Recognition

## Abstract:

From controlling a driverless car to carrying out face detection for biometric access, image recognition helps in processing and categorizing objects based on trained algorithms. Over the years, the market for computer-based vision has grown considerably. It is currently valued at USD 11.94 Billion and is likely to reach USD 17.38 Billion by 2023, at a CAGR of 7.80% between 2018 and 2023.

This is due to the increase in demand for autonomous and semi-autonomous vehicles, drones (military and domestic purpose) wearables, and smartphones. Moreover, the rising adoption of Industry 4.0 and automation in manufacturing industries has further stimulated the demand for Computer Vision.

## Problem Statement:

Read any image from the test dataset, plot the image and report to which person ( name in dataset) the image belongs to using CNN

## Dataset Information:

To demonstrate face recognition on a custom dataset, a small dataset is used. It consists of around 15-25 face images of 10 different persons. The metadata for each image (file and identity name) are loaded into memory for later processing.

## Scope:

- Training the neural network
- Image processing using Keras library
- Generating embeddings for images and understanding distance metrics
- Reading and identifying the image of a person using convolutional neural networks

## Learning Outcome:

The students will get a better understanding of how image processing takes place and use CNN to identify the person in a given image.