**Capstone project ideas**

**Project idea 1:** Vehicle Type Recognition (Image classification)

***Context:***  
This project corresponds to vehicle image classification dataset containing images of four different types of vehicles: Car, Truck, Bus, and Motorcycle. The dataset is curated to develop and evaluate different image classification models for identifying various vehicle types from images.

Dataset source:  
<https://www.kaggle.com/datasets/kaggleashwin/vehicle-type-recognition>

**Project idea 2:** US license plates- Image Classification

***Context:***This project consists of a very high-quality dataset, US license plate images from 50 states, District of Columbia and 5 territories, i.e., total 56 classes for classification. Based on the information provided, all images are originals, no augmented images are present in the dataset. All images are size 128 X 224 X 3 in jpg format. All images have been cropped so the license plate occupies at least 90% of the pixels in any image. This ensures that even simple models will achieve high training, validation and test accuracy. Also included is a csv file so that users can use that to create their own train, validation and test sets if desired.

Dataset source:  
[https://www.kaggle.com/datasets/gpiosenka/us-license-plates-image classification?select=new+plates](https://www.kaggle.com/datasets/gpiosenka/us-license-plates-image%20classification?select=new+plates)

**Project idea 3:** Human Action Recognition (HAR) Dataset

***Context:***Human Action Recognition (HAR) aims to understand human behavior and assign a label to each action. It has a wide range of applications, and therefore has been attracting increasing attention in the field of computer vision. Human actions can be represented using various data modalities, such as RGB, skeleton, depth, infrared, point cloud, event stream, audio, acceleration, radar, and WiFi signal, which encode different sources of useful yet distinct information and have various advantages depending on the application scenarios.

Consequently, lots of existing works have attempted to investigate different types of approaches for HAR using various modalities.

The goal of this task is to build an Image Classification Model using CNN that classifies which class of activity a human is performing. The dataset features 15 different classes of Human Activities. The dataset contains about 12k+ labelled images including the validation images. Each image has only one human activity category.

Dataset source:  
<https://www.kaggle.com/datasets/meetnagadia/human-action-recognition-har-dataset>