Capstone three project ideas

1. Face Mask Classification

Dataset link: [Face Mask Classification | Kaggle](https://www.kaggle.com/datasets/dhruvmak/face-mask-detection/code)

This dataset is about define a person is wearing a mask or not. The data set contain 440 images including with mask and without mask sperate in half. The reason I choose this topic because covid virus is a major disaster facing the whole world, and we will still need to wear masks for a long time to come. Wearing a mask is the easiest and most effective way for humans to prevent covid. So I think that if we can use machine learning technology to distinguish between people who wear masks and people who don't wear masks, it can better help government departments to control the epidemic. For example, people who are not wearing masks can be detected through cameras at the entrance of public facilities.

2. Satellite image classification

Dataset link: [Satellite Image Classification | Kaggle](https://www.kaggle.com/datasets/mahmoudreda55/satellite-image-classification)

This dataset is about terrain photographed by satellite include could, green area, dessert and water. The dataset has 5631 images with jpg format. Remote sensing technology observes the ground through artificial satellites or aircraft and uses the propagation and reception of electromagnetic waves to perceive and analyze certain characteristics of the target. In practical applications, remote sensing technology is widely used in many aspects such as resource survey, surface environment monitoring, and human activity monitoring. One of the reason I choose this dataset is because I have learnt remote sensing class during my master program so I know how does remote sensing technology relate to our life. By identifying the types of these images, it can help geographers better analyze vegetation distribution, landform distribution, meteorologists for weather forecasting or agricultural scientists for crop production analysis.

3. Vehicle Detection Image Set

Dataset link: [Vehicle Detection Image Set | Kaggle](https://www.kaggle.com/datasets/brsdincer/vehicle-detection-image-set/code)

This dataset is about classify the Part of the vehicle and part of the non-vehicle in the photo (road, sky, landforms). The dataset has 17760 images, half of them are vehicle.

The meaning of use this dataset is for Traffic departments and city management departments can better grasp the traffic situation