ENEL 525 Fall 2024 – Final Project

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# Introduction

This project involves developing a convolutional neural network (CNN) to classify aerial satellite images based on their land use categories. The goal is to utilize deep learning techniques, extract relevant features, and achieve accurate classification of various land types. By going through the exercise of identification and recognition of different patterns in the dataset, I can learn about the effectiveness of CNNs in handling image classification and how they work.

# Methodology

I have been given a dataset containing 2100 aerial satellite images, consisting of 21 different land use categories. To help identify these land use categories, I require a neural network model which can identify new input images to a high degree of accuracy.   
  
I will be utilizing Python with the TensorFlow library to develop a model to identify the land use category of input images, training with 80% of the images and using the last 20% for validation/testing.

Padding is not used, as not much of the dataset has distinctive features on the edges. The airplane, sparse residential, intersection, and baseball diamond categories contain their distinctive features in the center of the image.