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CSC790-001: Project Proposal

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**Project Description**

We propose a project that will utilize Convolutional Neural Networks to classify the occupancy status of a parking space as occupied or available using an image of the parking space in question. The potential use case for this is in deployment at locations of high parking volumes; given that a functioning model was able to receive live updates of a parking space, one could then develop a means of providing the occupancy status to potential users of the lot. This project is based upon a former Capstone Project from CSC450 and could potentially be utilized by the university, if successful.

**Data Description**

The data we will be using is available at <http://cnrpark.it/>. We would potentially start with the CNRPark dataset; this dataset consists of approximately 12.5 thousand 150x150 images of parking spaces, each in ideal (that is, clear and sunny) weather conditions. Given success in this dataset, we would then move on to the CNR-EXT dataset, which is considerably larger and more diverse with regards to lighting, weather, and camera angles. We have already acquired and preprocessed the CNRPark dataset; it can be provided upon request.

**Disclaimer**

The link provided contains links to pretrained models that perform this task. We would not be using the pretrained models in this project; we would be creating and training a model from scratch.