California State University San Bernardino

School of Computer Science and Engineering

CSE 595 Undergraduate Independent Study

Date

May 6, 2020

Time

11:00 AM

Place

Zoom (ID: 954-9932-7581)

https://csusb.zoom.us/j/95499327581

Title

Parking Lot Monitoring

Student

Jaime Cristobal

Advisor

Dr. Yunfei Hou

Abstract

Creating a robust computer vision-based parking lot capacity counting system presents many challenges depending on the project's needs. While there have been various systems developed and deployed commercially using various available methods, they cannot be applied universally for every project. Factors such as differing camera angles must be considered. In this presentation, we will cover a common method for building such systems called tracking-by-detection for frontal view camera angles (where a 3D space flattens into a 2D space). We will go over the deep learning approach to detecting vehicles and two implementations for the tracking algorithm with one utilizing the Euclidean distance and other a Kalman filter based tracker. Overall, we will see which approach is most optimal for frontal view situations.