

Parking Analysis via Image Processing

Wi-Fight It

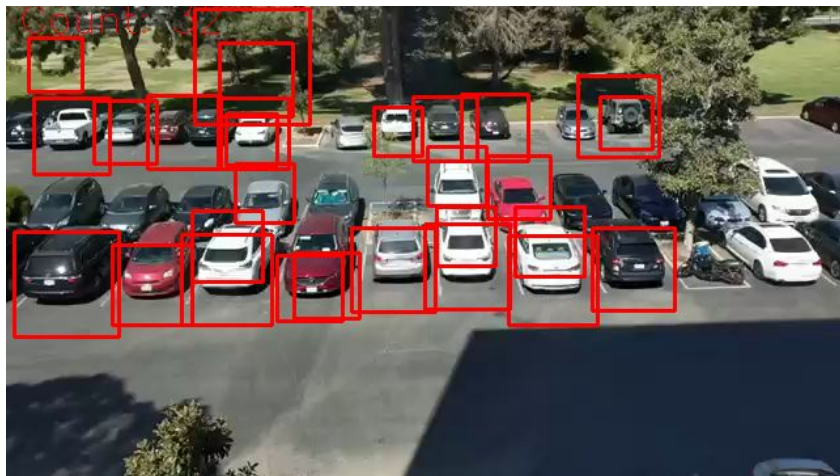
- Joshua Annis
- Drake Floyd
- Sean Fontes
- Miguel Navarrete

Presentation Outline

- Attempt History Overview
 - Model Checking - Haar Cascades
 - Image Manipulation
- Current Results and Progress
 - Next Steps
- Goal Outline
 - Conferences
 - Selected Goal



Modeling with Haar Cascades

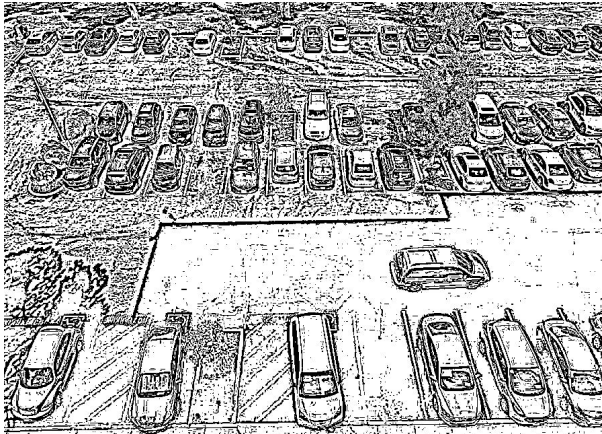


Initial Model Implementation



Filtered

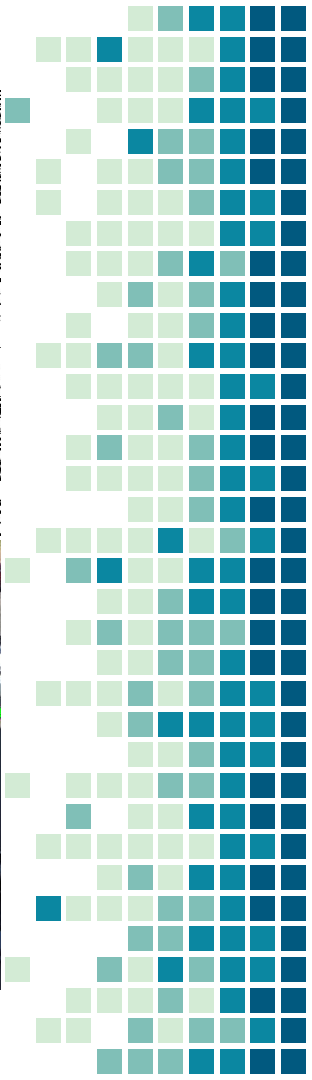
Adaptive Thresholding & Contouring



Gaussian Thresholding

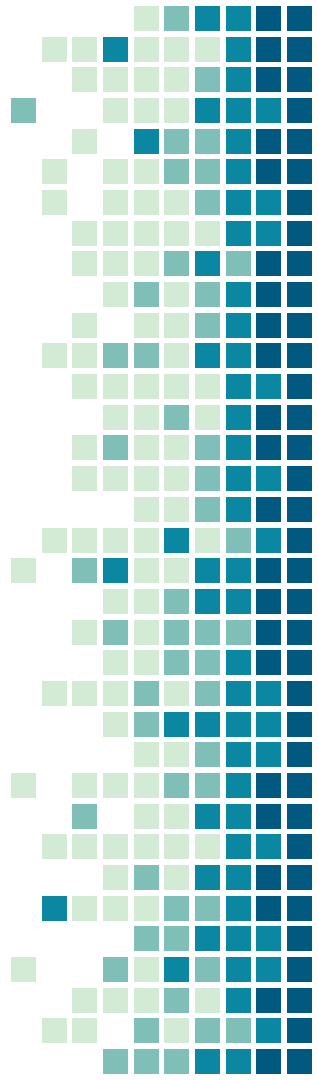
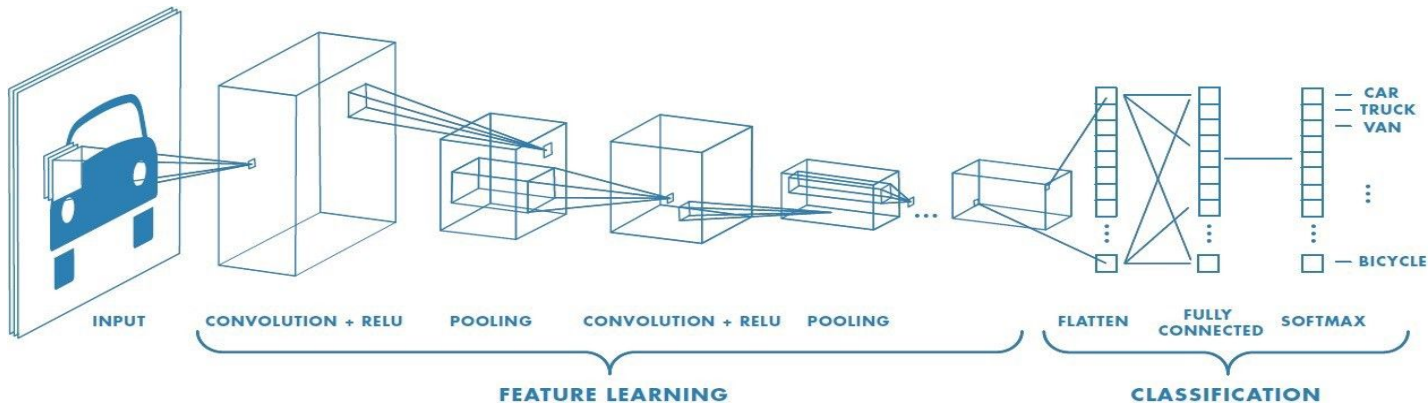


Mean Thresholding



YOLO: Real-Time Object Detection

- Convolutional Neural Network based in Darknet
 - Darknet - Open Source Neural Net Framework
- Highly computationally intensive
 - A Pascal Titan X processes 30 fps



Frontend/Backend



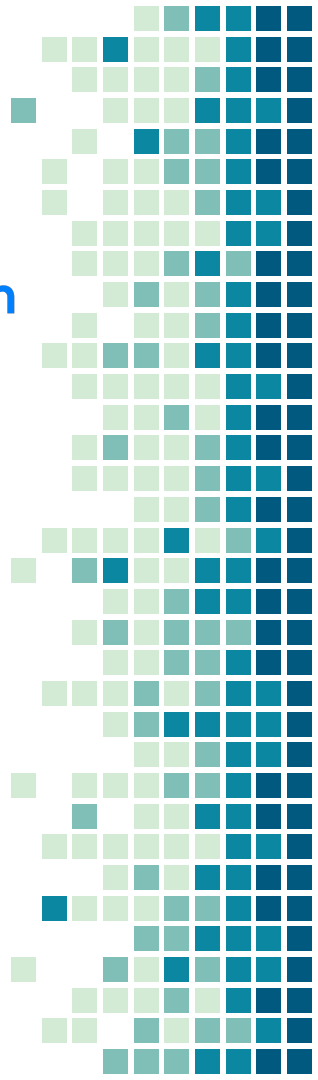
We're using a Digital Ocean Droplet server.

Node.js is an application runtime environment that allows you to write server-side applications in JavaScript. Node is an open source service environment.

Node.js can create, open, read, write, delete, and close files on the server, collect form data, and can add, delete, modify data in your database.

React, a JavaScript library, is the front-end language we are using.

PostGRES



Current Timeline

Jan.

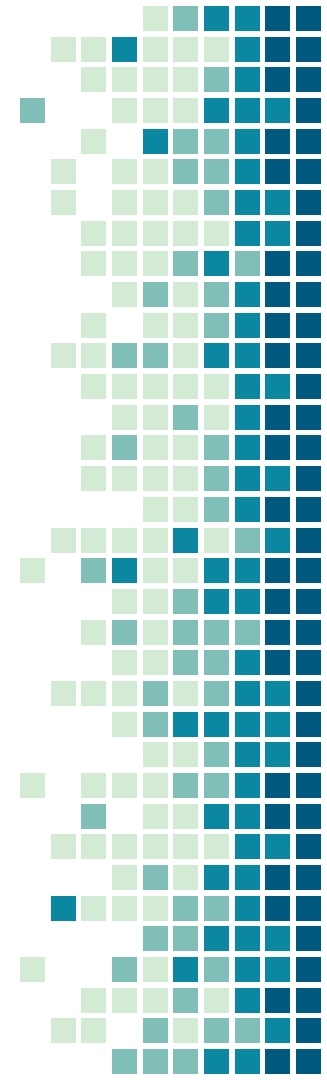
- Testing program on Jetson Nano
- Debugging and filtering results

Feb.

- Establish dedicated connection between the front and back ends
- Finalize front end design

Mar. - End of Semester

- Implement and refine predictive model



Potential Conferences

- ~~IEEE: Computer Vision and Pattern Recognition~~
 - Deadline to Apply: November 15, 2019
- ~~ECCV: European Conference on Computer Vision~~
 - Conference Date: August 23-28, 2020
 - Location: United Kingdom
- ~~SIGCSE 2020~~
 - Deadline to Apply: August 23, 2019
- ~~IntelliSys: Intelligent Systems Conference~~
 - Deadline to Apply: January 15, 2020
- ~~WACV: Workshops on Applications of Computer Vision~~
 - Deadline to Apply: July 26, 2019
- ~~ICO2020: International Conference on Intelligent Computing~~
 - Conference Date: October 8-9, 2020
 - Location: Thailand



CSUB Student Research Competition

Purpose

“The competition is held to promote excellence in undergraduate and graduate scholarly research and creative activity by recognizing outstanding student accomplishments at California State University, Bakersfield.”

Requirements

Deadline to Apply

Monday, February 24th, 2020

Submission

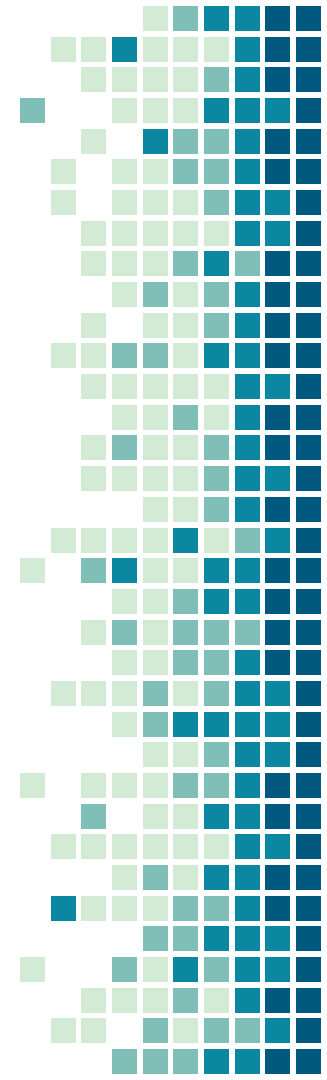
Five page paper summarization

Competition

10 minute oral presentation

5 minutes for questions

Friday, March 6th, 2020



CSU Coast Research



- Received a grant for research materials
- Repurposing current project to detect elephant seals

