Caleb Patton

Senior in Computer Engineering

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Champaign, Illinois

Portfolio Website:
cap099.github.io

Education

University of Illinois at Urbana-Champaign

August 2018 - May 2022

Bachelor of Science, Computer Engineering

Fall 2021 GPA: 3.73/4.0

Top Skills:

Python, Machine Learning, Neural Networks, Robotics, ROS, Webots, OpenCV, C/C++

Professional Experience

Brunswick iJet Lab, Champaign Illinois — *Computer Vision/Robotics Intern*

February 2021 - Present

- Developed a marine obstacle detection system in Python that combined the outputs of 4 Machine Learning models using Sensor Fusion techniques and ROS
- Implemented object detection and SLAM algorithms on educational robotic platforms such as Turtlebot3 and Amazon DeepRacer
- Contributed to the development of a Computer Vision/Machine Learning pipeline for autonomous boating by overseeing initial trials of data collection, data labeling and model selection
- Developed software for autonomous boating simulations using the CGAL library and Unreal Engine in C++

Xaptum, Chicago Illinois — *Software Engineering Intern*

January 2020 - August 2020

- Prototyped an Anomaly Detection/Notification system using Machine Learning and Erlang
- Built a REST API to initialize thousands of IoT Devices on Xaptum's Network using rebar3
- Presented analysis of anomalous connection events to supervisor using data visualizations bi-weekly

Altamont Company, Thomasboro Illinois — *Intern*

Summer 2018, Summer 2019, Summer 2020

- Contributed to the development of a static site generator using Python, Flask and SQLAlchemy
- Trained an ensemble of Deep Learning Networks to map 10,000+ product images to their corresponding part numbers

Skills

Programming Languages, Libraries and Tools:
Python, C/C++, PyTorch, Tensorflow, ROS, Webots, fast.ai, Docker, MySQL/Postgres, Erlang, rebar3, x86, HTML/CSS, Seaborn, Matplotlib, Linux, Make, Git

Design Software
Powershape, NX 12.0, Creo Parametric, Cura

Manufacturing Technologies
FDM/SLA 3D printers, Epilog Laser Cutter, Haas CNC Machines

Relevant Coursework
Data Structures/Algorithms

Mobile Robotics

Probability

Machine Learning

Deep Learning

Linear Algebra

Signal Processing

Statistical Analysis

Select Personal Projects

Portfolio Website (cap099.github.io)

2021

Jetson Nano Autonomous Vehicle (Python, ROS, PyTorch)

Haircut Classifier (PyTorch)

Portfolio Website (ReactJS)

2020

Pitch Sequencing Analysis (Python/matplotlib)

mlb.tv A/V Recorder (Python)

2019

MLB Strength of Schedule Analysis (Python)

Scratch Built Multirotor (3D Printer, Laser Cutter)

2018

R.Pi Dog Watcher (Python)