Caleb Patton

UIUC Computer Engineering Graduate

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Links

cap099.github.io

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Education

University of Illinois at Urbana-Champaign

May 2022

Bachelor of Science, Computer Engineering

GPA: 3.77/4.0

Top Skills

Languages: Python, C/C++ | Tools: Docker, ROS, PyTorch, OpenCV, Git, Linux

Professional Experience

Brunswick Corporation, Champaign, Illinois — *Computer Vision Software Engineer Intern*

February 2021 - December 2021

- Developed 2 perception systems for an autonomous watercraft to detect swimmers, boats, docks and other obstacles using FasterRCNN and YOLOv5 and MaskRCNN in at 30 fps and 10 fps respectively
- Optimized performance of C++ code for scientific computing to support autonomous boating simulations
- Researched methods to utilize and generate synthetic data to improve performance of DNNs using Unreal Engine by varying time of day, weather conditions and object generation
- Led team of 15 people in marine RGB and IR image data collection and subsequent obstacle labeling processes using dSpace Autera and Microsoft Azure
- Reported initial findings of research into use of GANs to generate synthetic marine image data to supervisor
- Ran mapping algorithms on mobile robotic platforms using LiDAR Sensors and Raspberry Pi Cameras

Xaptum Inc, Chicago, IL — *Data Science Intern*

January 2020 - August 2020

- Prototyped an Anomaly Detection/Notification system using Machine Learning and Erlang
- Detected anomalous connection events using Isolation Forest and Logistic Regression algorithms
- Presented analysis of connection events using Pandas, Seaborn and Matplotlib
- Contributed to a REST API to initialize thousands of IoT Devices on Xaptum's Network using rebar3

Altamont Company, Thomasboro, IL — *Machine Learning Intern*

Summer 2018, Summer 2019, Summer 2020

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

Select Personal Projects

Pipelined RISC-V Processor | Jetson Nano Autonomous Vehicle | FPGA based arcade-style game | x86 OS