

# Caleb Patton

Senior in Computer Engineering  
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## Links

cap099.github.io  
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## Education

University of Illinois at Urbana-Champaign  
May 2022 (Expected)  
Bachelor of Science, Computer Engineering  
GPA: 3.77/4.0

## Top Skills

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

## 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
- Built 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

OpenCV Robot Arm | Jetson Nano Autonomous Vehicle | FPGA based arcade-style game | x86 Operating System