Myra Cropper

Email |LinkedIn | Github

EDUCATION

William & Mary (2022-2025): B.S: Computer Science, Math Minor
Pursuing an MS in ECE (AIE) @ Carnegie Mellon

AWARDS

Undergraduate Park Award (top graduating CS student for academics, research); Research Assistant Fellowship - Vehicle Computing Lab; Elias Paparis Fellowship (CS academic achievement, research); Dean's List; 3x Hackathon Project Winner

COURSEWORK

Math: Multivariable Calculus; Linear Algebra; Differential Equations; Probability & Stats; Statistical Analysis
Computer Science: Cybersecurity; Data Ethics; Data Structures; Discrete Structures; Software Development; Computer Organization; Algorithms; Principles of Programming Languages; Intro to Machine Learning; Neural Networks; Data Mining

TECHNICAL SKILLS

Languages: Python; Java; C; C#; Bash Scripting; HTML/CSS/JS; React; Racket; C++
Programs/Tools: Ubuntu/Kali/Arch; Git/GitHub/GitActions; Unity; Microsoft 365 Applications; Azure; AWS; ROS; Google Colab; Docker; VMWare; Android Studio; Pytorch; CARLA; MetaDrive; OpenCV; Tensorflow; Scikit-learn; Powershell; Wireshark

RESEARCH EXPERIENCE

Autonomous Vehicle Research, Vehicle Computing Lab. *Spring 2024 – Spring 2025*
(Spring 2025) Current Work, first author: "Adaptive Multi-Camera Sensor Fusion for Autonomous Vehicles".

- Engineered a multi-sensor perception framework integrating Multi-Head Latent Attention (MLA) and Long Short-Term Memory (LSTM) networks to fuse multi-camera Vision Transformer (ViT) features in the Canadian Adverse Driving Conditions dataset.
- Enhanced localization accuracy by combing fused image features with GNSS inputs (latitude, longitude, altitude, roll, pitch, azimuth) and converting predictions to global XYZ coordinates using ENU transformation
- Demonstrated improved performance over a Convolutional Neural Network (CNN) baseline achieving an accuracy of 75%

(Fall 2024) Honors Thesis: "Multi-Sensor Fusion and V2V Communication in Autonomous Vehicles: A Comprehensive Framework for Self-Driving"; Demo

- Created fine-tuned EfficientNet model with Long Short-Term Memory (LSTM) with a 92% accuracy for detecting lane lines and predicting robot direction based on camera input; programmed robot in ROS2 to move based on prediction
- Implemented YOLO models with 94% accuracy for detection/object tracking on traffic signs, traffic lights, and other vehicles
- Utilized Data Distributed Services (DSS) for multi-robot communication to allow for robot parking and intersection crossing
- Worked with a lidar sensor and camera data fusion to implement distance-based object detection
- Created 3D visualizations to model robot environment settings from camera data using Octomapping in RVIZ

Software Engineer, Disinformation Lab, *Fall 2022 – Spring 2024*

- Worked on Forentify, a React website that uses a multimodal vision transformer model to analyze user uploaded manipulated video content and presents results of the manipulations to the user
- Worked to integrate model processing between React and Flask in Python; setup website hosting, hosting the model, and connecting to Firebase for video/image storage; displayed image heatmap based on model data

Core Member; Workshop Assistant, Google Student Developer Club. *Fall 2022 – Spring 2025*

- Worked with the U.S. Fish & Wildlife Service to use machine learning to count cranes (Spring 2023)
  - Optimized an ASPDNET density estimation model to use GPUs on the CS lab's computers
  - Created a ResNet density model in PyTorch to predict a bird density map
- Hosted workshops/tech support with the club to teach Python, Flutter, and React through projects; Created and presented workshops on introduction to ML using Google's Teachable machine and Databases
- Integrated cart tracking with the Google Maps API using Firebase and Flutter for Campus Escort

PROFESSIONAL EXPERIENCE

ML/AI/Cloud Computing Intern, EverWatch – Booz Allen. *Summer 2024, Incoming Summer 2025*
Project: End-to-end MLOps Pipeline; Mentor: David Culver

- Designed an end-to-end machine learning pipeline for MLOPS Level 1/2 using Kubeflow for malware and network intrusion detection with a 99% accuracy rate (From reading in data, EDA, to serving the model with KServe, and reading in new streaming data to make predictions); integrated CI/CD with GitActions
- Created an object detection and classification pipeline using YOLO for a defense application with a 96% accuracy rate; designed a web app interface that performs real-time detection on user uploaded images
- Structured data storage using PostgreSQL for feature, model registry, and metadata storage

Computer Science Consultant, William & Mary CS Department. *Fall 2024-Spring 2025*

- Held office hours twice a week to help students with Software Development (Java) and Algorithms (C++) programming projects

Software Engineering Intern, Hardwire. *Summer 2023*

- Wrote Java URCap to allow communication between a UR Robot and a Cognex Camera using Telnet over TCP/IP; created UI in Java Swing; set up port toggling for error handling; responsible for maintaining documentation for technicians
- Established communication between multiple UR Robots using Modbus
- Created Python scripts to monitor robots' acceleration using RTDE and save to a log file
- Worked with engineers to get PLC data; plotted the data using Blazor and C# on a web application