

Jeremy Acheampong

📞 614-805-1859 ✉️ jacheampong@umich.edu  [linkedin.com/in/jeremyacheampong](https://www.linkedin.com/in/jeremyacheampong)  github.com/acheampongj

Education

University of Michigan - Ann Arbor

Master of Science in Robotics

Ann Arbor, MI

August 2024 – December 2025

Relevant Coursework: Math for Robotics, Programming for Robotics, 3D Robot Perception, Robotic Systems Laboratory, Artificial Intelligence Foundations, Advanced Computer Vision, Self Driving Cars

Capital University

Bachelor of Arts in Mathematics

Bexley, OH

August 2020 – May 2024

Relevant Coursework: Intro to Computer Science, Algorithms and Data Structures, Intermediate Statistics, Introduction to Data Science, Linear Algebra, Calculus I-III, Differential Equations and Dynamical Systems

Work Experience

Software Development Engineer Intern

Amazon AWS

May 2025 – July 2025

Arlington, VA

- Built a scalable policy validation system using Apache Spark on AWS EMR to process authorization policies across multiple customer accounts, ensuring data integrity during system upgrades.
- Designed a distributed pipeline with DynamoDB, S3, and Step Functions to validate policies against evolving schema versions, enabling early detection of compatibility issues.
- Collaborated with product managers and senior engineers to deliver validation infrastructure that supports upcoming customer-facing features, improving system reliability.

AI/ML Research Intern

Air Force Research Laboratory

May 2024 – August 2024

Dayton, OH

- Developed an algorithm for augmenting real, small-scale, and synthetic datasets for CNN training.
- Evaluated models trained on various data combinations to study generalization and classifier performance.
- Built a model assessment tool for evaluating and optimizing a classifier's accuracy.

Research and Development Intern

U.S. Army DEVCOM C5ISR Center

July 2023 – August 2023

Fort Belvoir, VA

- Trained a YOLOv5 model on 1,000+ annotated LWIR images from FLIR Boson and DVE Wide sensors to detect anti-tank mines and personnel.
- Deployed model inference using PyTorch on Spot's onboard Jetson Orin, enabling near real-time detection with 85% precision and 66% recall.

Selected Projects

A Vision-Language Approach for Zero-Shot Door Handle Detection and Manipulation – [Report]

- Integrated Grounding DINO for zero-shot door-handle detection and ViLT for visual question answering to interpret door state and handle location.
- Used Boston Dynamics Spot SDK to execute autonomous manipulation, achieving 62.6% detection accuracy within 1 meter without task-specific training.
- Implemented fallback strategies to generalize across multiple door types and partially open door states.

Technical Skills

Languages: Python, C++, R, Kotlin

Technologies: PyTorch, OpenCV

Tools: Git, Jupyter, NumPy, Singularity

Concepts: Computer Vision, Deep Learning, Robotics