

# Anh Nguyen

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## EDUCATION

### University of Massachusetts Amherst

Bachelor of Science in Computer Science (GPA: 3.9)

Amherst, MA

Expected Graduation: May 2027

**Relevant Coursework:** Artificial Intelligence, Software Engineering, Introduction to Robotics, Introduction to Algorithms,

Introduction to Computation, Introduction to C, Computer Systems Principles, Reasoning under Uncertainty, Object Oriented Programming (Python), Data Structures (Java), Programming Methodology (Javascript)

**Awards:** Chancellor's Award, Dean's Honors List (All semesters), Robert and Deanna Hagerty Scholarship

## EXPERIENCE

### Robotics Researcher

Dynamic and Autonomous Robotic Systems Lab

Amherst, MA

Sep 2024 - Present

- Developed a synthetic data pipeline to train deep learning models for robotic mobility aids assisting Blind and Low-vision individuals.
- Utilized Unreal Engine 4 (UE4) with Microsoft's AirSim to generate 15,000+ photorealistic, annotated images for training datasets.
- Trained models on synthetic datasets achieved up to 12% higher precision compared to models trained on real-world data.
- Co-authored a research paper submitted to IEEE International Conference on Robotics and Automation (ICRA) 2026 on synthetic data generation for robotic mobility aids.

### Early Research Scholars Program Researcher

Dynamic and Autonomous Robotic Systems Lab

Amherst, MA

Sep 2024 - May 2025

Research Poster

- Built a new dataset of 1,500+ images (569 guide dog robot captures, 1,000 Google Earth images) tailored for safe street-crossing contexts.
- Fine-tuned YOLOv11 and YOLOv11-Seg models, achieving 95% accuracy and improving robustness of pedestrian signal detection in diverse environments.
- Conducted real-world testing on the guide dog robot, demonstrating successful real-time detection and labeling of pedestrian signals.

## PROJECTS

### Lightsaber

May 2025

- Designed and built an interactive lightsaber prototype using Arduino, LEDs, and an IMU sensor.
- Programmed motion-responsive color-changing effects triggered by IMU data.

### She Zone (Hackathon Winner)

Hack(H)er413 - 36hr hackathon

Feb 2025

- Co-developed She Zone, an anonymous platform empowering women to share personal stories.
- Implemented an AI-powered chatbot to provide personalized support and engagement for users.
- Designed an upvote-based leaderboard system to highlight impactful stories and drive community interaction.

### UResources

HackUMass - 48hr hackathon

Nov 2024

- Co-developed a student networking platform using JavaScript, HTML/CSS, Node.js, and MongoDB.
- Built and integrated a secure login system with session management for improved security and UX.

## SKILLS

**Programming Languages:** Python, Java, C/C++, C#, Swift, Dart, JavaScript, HTML, CSS, Node.js, EJS

**Frameworks and Tools:** Arduino, MongoDB, Unreal Engine, Unity Engine, AirSim, IsaacSim

**Machine Learning and AI:** NumPy, Pandas, OpenCV, YOLO

**Robotics Skills:** Forward and Inverse Kinematics, Jacobian, Adjoint Transformation, Orientation Representation