An Nguyen

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EDUCATION

Northwestern University Expected Dec 2025
Master of Science in Robotics
Courses: Embedded Systems in Robotics, Robotic Manipulation, Machine Dynamics, Microcontroller System Design, Advanced C++ (Winter 2025), Artificial Life Simulation with Mujoco (Winter 2025)

Oberlin College and Conservatory May 2024
Bachelor's Degree in Computer Science
Courses: Data Structures; Algorithms; Systems Programming; Database Systems; Computer Architecture

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C, C#, Racket
- **Web and Frontend:** HTML/CSS, JavaScript, Flask
- **Robotics:** ROS/ROS2, Feedback/Control Systems, Embedded Systems, SLAM, MoveIt, OpenCV, RVIZ, Gazebo, RViz, AprilTags
- **Other:** Linux, Git, Github, Eclipse, Bash Scripting, Visual Studio Code, OpenSCAD

EXPERIENCE

AI Engineer Intern Apr. 2023 - July 2023
VinAI | Ho Chi Minh City, Vietnam
- Developed a Python-based computer vision tool to accurately identify driver head movements, enabling the capture and mitigation of driver distractions.

Data Science Intern Aug. 2022 - Feb. 2023
HEINEKEN | Ho Chi Minh City, Vietnam
- Optimized a data cleaning and processing tool, reducing duplication detection time for 17,000+ duplicate store outlets among 390,000+ records (Python, pandas).
- Created a route optimization web application to schedule efficient sales representative visits (Python, Flask, HTML/CSS, JavaScript, Folium, Openrouteservice).

Research Assistant Jan. 2021 - May 2021
Brown University | Providence, RI
- Conducted research in computer vision and computer graphics for Google Research's exploreCSR: Socially-Responsible Artificial Intelligence for Computational Creativity.
- Implemented a convolutional autoencoder in PyTorch to retrieve 3D characters from the RigNet dataset that closely match the front view of a 2D character query.

PROJECTS

Pool-inator: Vision-Guided Pool Playing with a 7-DOF Arm (Python, OpenCV, ROS2, MoveIt)
- Created an image processing pipeline for the Franka arm to localize pool ball coordinates.
- Collaboratively designed a motion planning interface in ROS2 with MoveIt for collision-free planning and control, both in Gazebo and real-world applications.

Pen Stealer: Automated Pen Retrieval with a 4-DOF Arm (Python, OpenCV)
- Developed a vision-based system and control algorithms for the PincherX 100 to autonomously locate and grab a purple pen using the Intel RealSense D435i camera.

Color Composer (C)
- Built and programmed a differential drive robot in a team to detect colors based on sensor outputs and play music notes according to the mapped thresholds.
- Integrated wireless control using nRF52833 microcontrollers.

KUKA youBot Mobile Manipulation (Python, CoppeliaSim)
- Implemented whole-body control for trajectory planning, odometry, and feedback control of the omnidirectional KUKA youBot to perform pick-and-place tasks in dynamic simulations.