

NGUYEN “MATT” NGUYEN

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EDUCATION

University of North Carolina at Charlotte

- BSc in Mechanical Engineering GPA: 3.97/4.0 | Aug 2023 - Dec 2025
- Minor in Mathematics and Computer Science AI/ML concentrated GPA: 4.0/4.0 | Aug 2023 - Dec 2025

WORK EXPERIENCE

FANUC America | Automation Engineers Intern | Huntersville, NC | May 2025 – Aug 2025

- Designed custom end-of-arm tooling and robot fixtures according to project specifications, supporting sales through application simulation in ROBOGUIDE and performance assessments.
- Produced engineering drawings and BOMs in SolidWorks. Coordinating with manufacturers to ensure precise fabrication.
- Promoted FANUC's Remote Motion Control option by building a Python-based GUI with TKinter and Socket network communication protocols and applied OpenCV to generate single-path drawing demonstrations.
- Applied reinforcement learning methods for vision-based bin-picking applications, strengthening knowledge in machine learning and robot decision-making
- Took on support tickets to assist customers with troubleshooting system issues over email, calls, and site visits, and provided in-person training for potential customers.

FANUC America | Robotics Engineer Intern | Huntersville, NC | May 2024 – Aug 2024

- Transformed initial concepts into interactive collaborative robot demo cells with emphasis on enhancing product visibility and human-robot interaction to highlight the company's solutions.
- Completed 10 demo cells showcased at company booths during the International Manufacturing Technology Show 2024.
- Developed comprehensive documentation to enhance knowledge transfer and training for future projects and reference.

RESEARCH EXPERIENCE

Wind Sensing Research | UNC Charlotte | Jan 2025 – May 2025

- Designed and implemented an experimental testing station to analyze wind behavior using high-speed computer vision tracking in MATLAB to quantify airflow dynamics from ping pong ball motion.
- Developed calibration methods and systematically generated trial datasets, applied statistical analysis to validate model accuracy and experimental repeatability.

High-Speed Obstacle Avoidance with Multi-Modal Sensors | UNC Charlotte | Sep 2023 - May 2024

- Developed predictive models from multi-modal sensor data streams to improve obstacle detection and mapping accuracy, applying statistical filtering to optimize data quality and increase performance.
- Implemented and optimized SLAM algorithms, gaining proficiency in large-scale data processing.
- Presented at the AIAA Conference in Greensboro, NC, 2025.

PUBLICATIONS

M. Nguyen. "3D Off-road Terrain Mapping for Autonomous Ground Vehicle Energy-Optimal Path Planning," 2025 AIAA Regional Student Conferences.

VOLUNTEER EXPERIENCE

VEYM youth leader at Saint Joseph Vietnamese Catholic Church | Charlotte, NC | Jan 2020 – Present

- Provide weekly lessons and activities that promote engagement and teamwork for a class of 40 students.
- Participating in organizing training camps around the years for the organization.

REWARDS

Doosan Bobcat STEM Scholarship | Jun 2025

PROJECTS AND COMPETITIONS

Contactless Food Delivering Prototype - STEM TANK Competition

Mar 2023 - Apr 2023

- Addressed the high demand for campus food services within limited real estate by conceptualizing and implementing an effective catering solution.
- Project role: Designed a compact prototype for an intelligent, autonomous, secure contactless food distribution system catering to students. Constructed using a 3D printed model, Arduino sensors, and assorted components. Project code on [GitHub](#).

Robotics arm design and build

Aug 2024 – Nov 2024

- Collaborated with a team of six to design, develop, and build a 4-axis robotic arm from the ground up, including conceptual design, constraint calculations, kinematics analysis, and final construction.
- Project Role: Control Engineer – Designed control circuits and Arduino programs for manual and autonomous pick-and-place operations with optimized runtime.

SEIMENS ALIGN

Jan 2025 – Current

- Redesigned the alignment process for large turbines used in nuclear reactors prior to milling.
- **Project Role:** Programmer and CAD Designer – Developed sensors and a control system to facilitate a pipeline to measure discrete points along the turbine body and applied the bending equation to analyze misalignment. Generated graphs and provided actionable recommendations to achieve high-precision alignment.

SKILLS

- Programming: Python, C++, Java, MATLAB.
- Technical tools: Robot Operating System 2, OpenCV, SolidWorks Design for Manufacturing, Microsoft Office, Ubuntu.
- Hardware: Additive manufacturing, Arduino, Raspberry Pi, electrical circuits construction, and troubleshooting.