Tom O'Donnell

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SKILLS

Software: C++, Python, Embedded C, ROS2, Verilog, Git, OpenCV, TensorFlow, Pytorch, Pandas, NumPy
Hardware: Digital logic, embedded systems, STM32, motor control, CAD

EDUCATION

Purdue University (West Lafayette, IN) **3.63 GPA, May 2025**
Bachelor of Science in Computer Engineering , Concentration in Software Engineering
Key Courses: Data Structures (ECE368), Microprocessor Systems (ECE362), Advanced C Programming (ECE264)

TECHNICAL/WORK EXPERIENCE

Ford Motor Company **May 2023 – Aug. 2023**
Model e Planning & Strategy Intern *Dearborn, MI*
- Identified key customer issues facing Ford products via automated social media analysis
- Built software utilizing natural language processing (NLP) to detect emerging product concerns
- Supported the triage and development of solutions for customers of the Ford Model e program

Purdue Robomaster Club **Jan. 2022 – Present**
Algorithms Team Lead and Core Member *West Lafayette, IN*
- Leading a team of 35+ software engineers to develop autonomous robotic systems
- Innovating computer vision, AI, and SLAM routines using ROS2
- Earned 4th place nationally in the RMNA robotics competition

EPICS (Engineering Projects in Community Service) **Aug. 2021 – May 2022**
Engineer and Communications Lead *West Lafayette, IN*
- Engineered a mount for a donated GE-90 Engine Fan Blade
- Deployed custom RFID beacons to monitor campus bike traffic and encourage green transportation

Country Club of Detroit **May 2022 – Aug. 2022**
Lifeguarding *Grosse Pointe, MI*
- Provided lifeguarding and upkeep services (certified by American Red Cross) at a country club pool.

TECHNICAL PROJECTS

Rubik's Cube Solving Robot
- Designed software, embedded systems, and a 3D printed robot to speedsolve Rubik's Cubes
- Project featured by official Arduino company website and Facebook
- 66% faster than human world record, 96% faster motor controller than original iteration

Research: Navigation and Image Processing
- Collaborating with Purdue Master Program for dynamic robot navigation via LiDAR and SLAM
- Implementing image pre-processing and noise removal to detect objects in low-light scenarios

Data Augmentation and Neural Network Model
- Authored a data augmentation pipeline to improve detection accuracy by 60% and long-range accuracy by 40%

Awards: EPICS Leadership Award, Dean's List (2021-present), Semester Honors (2021-present)