TIMOTHY MARSHALL(Tim)

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EDUCATION

Bachelor of Electrical Engineering |University of Dayton, Dayton, OH |May 2025

- Relevant Courses: Control Systems, Electrical Communications, Intro to Robotic Manipulators, Analog/Digital Signals & Systems

Associates in Automotive | Sinclair Community College, Dayton, OH |

- Relevant courses: Intro to Hybrid Systems (Automotive), Automotive Electrical and Electronics, Engine Systems, Automatic Transmission systems, Fundamentals of tooling and machining

CO-OP EXPERIENCE

Engineering Co-op | University of Dayton Research Institute, Dayton, OH 03/2024 – 02/2025

• Developed embedded software for autonomous quadcopter flight, interfacing onboard sensors, actuators, and control logic
• Implemented real-time behaviors and state-based logic for autonomous navigation and object scanning
• Conducted bench-level testing and on-vehicle validation of embedded software
• Maintained version-controlled codebase using GitHub

PROJECTS

- **Search and rescue robot**
  Designed and implemented embedded control software integrating sensors, actuators, and motor drivers for autonomous and semi-autonomous operation
  • Developed state-based control logic to manage navigation, task execution, and fault handling
  • Performed bench-level testing and system validation on physical hardware
- **Personal Robot**
  Developed C/C++ firmware on microcontroller platforms to control motors, sensors, and peripheral devices
  • Applied control systems concepts to achieve stable, repeatable motion
  • Used Git for version control and iterative development

WORK HISTORY

Customer Service & Delivery | Multiple Employers | 2009 – Present
Demonstrated reliability, time management, and safe vehicle operation
Automotive Technician | Various Shops |2012-2016

• Diagnosed and repaired electrical and mechanical vehicle systems across multiple makes
• Interpreted schematics and documented repairs in compliance with service standards

SKILLS

Programming: C/C++ (embedded systems), Python (scripting & analysis), MATLAB, Java
Software & Tools: FPGA, Linux, ROS2, GitHub, Arduino, PX4, Docker, SolidWorks, 3D Printing.

PUBLISHED RESEARCH

Ensemble Methodology for Automated Machine Predictive Maintenance Classification

IEEE NAECON July 2024 https://ieeexplore.ieee.org/document/10670632