

Yousef Maitah

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EDUCATION

University of Michigan

Ann Arbor, MI

Bachelor of Science in Electrical Engineering, GPA: 3.7/4.0

Aug. 2021 – Dec 2025

- **Coursework:** Logic Design, Digital Circuits, Computer Architecture, Control Systems, Signals and Systems, Programming and Data Structures, Semiconductor Devices, Electromagnetics
- **Awards/Honors:** James B. Angell Scholar, Dean's List, University Honors

EXPERIENCE

General Motors

Milford, MI

Engineering Intern - Driveline Development and Integration

May 2025 – Aug. 2025

- Supported driveline mechatronics and controls integration efforts on the D2-2 AWD system (Chevy Equinox / GMC Terrain) by investigating warranty and resolving system performance and software issues
- Conducted on-road and off-road data collection for wheel torque and driveline dynamics using instrumentation, including specialized evaluations in cold box environments (-40°C) and sand dunes terrain testing
- Collaborated cross-functionally with technical specialists, DREs, suppliers to assess halfshaft NVH characteristics

Nexteer Automotive

Saginaw, MI

Engineering Intern - Systems Application Team

May 2024 – Aug. 2024

- Developed an ignition test box for a Steer-by-wire project, improving reliability through enhanced test coverage
- Analyzed OEM design, safety, and software requirements to strengthen feature function mapping
- Authored detailed work instructions, increasing test efficiency and knowledge transfer
- Collaborated cross-functionally to drive effective teamwork and problem-solving

Nexteer Automotive

Auburn Hills, MI

Engineering Intern - ECU HiL Team

May 2023 - Aug. 2023

- Designed and executed test procedures for ECU-based electric power steering, improving system reliability
- Configured and debugged harness/test bench setups, reducing setup time and improving testing efficiency by 30%
- Analyzed test data to identify patterns and anomalies, providing detailed reports and recommendations

PROJECTS

Out-of-Order RISC-V Processor | *SystemVerilog*

Oct. 2025 – Dec. 2025

- Designed a fully synthesizable N-way superscalar out-of-order processor with advanced features such as instruction prefetching and early branch resolution
- Implemented a MIPS R10000-style microarchitecture with register renaming

Smart Room Occupancy Monitoring System | *C*

Oct. 2025 – Dec. 2025

- Designed and built an IoT room-occupancy sensing system using an ESP32 microcontroller to detect and count people entering/exiting a space in real time, achieving 90% detection accuracy
- Integrated Time-of-Flight and PIR sensors to improve detection accuracy and direction tracking
- Implemented wireless data transmission to a central server for live occupancy monitoring

Maglev PID Controller | *MATLAB, Simulink*

March 2025 – April 2025

- Designed a PID controller using a linearized model of a nonlinear magnetic levitation plant to stabilize the system
- Validated the control logic through physical hardware-in-the-loop testing, achieving a rapid settling time of under 3 seconds and zero steady-state error

SKILLS

Languages: C/C++, Python, SystemVerilog, MATLAB, HTML/CSS

Tools: Altium Designer, Arduino, Cadence Virtuoso, Git, Linux, Oscilloscope, Simulink, Vector Tools, VS Code

Techniques: Circuit Design, Communication Protocols, FPGA, Hardware Validation, Soldering, System Design