

Tyra Correia

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- Education:** **Master of Science, Electrical Engineering**, Concentration in Control Systems **Jan 2025- May 2026**
University of Michigan-Dearborn, Dearborn, MI
- Master of Engineering Management**, Awarded Graduate Assistantship **Feb 2024- Nov 2024**
Rose-Hulman Institute of Technology, Terre Haute, IN **GPA: 3.87**
- Bachelor of Science, Electrical Engineering**, Minor in Language and Literature **Sept 2020- Feb 2024**
Rose-Hulman Institute of Technology, Terre Haute, IN **GPA: 3.62**
- Skills:** **Software:** Java, Python, PLC, C, MATLAB, TensorFlow, PyTorch, GitHub, Simulink, Arduino IDE, Maple, R, Modelsim, Quartus, PSPICE, NI LabVIEW, CST, DesignSpark, SolidWorks, AutoCAD, KiCAD, Eagle Test Systems, MPLAB, ANSYS HFSS, Allen Bradley PLC, Ignition HMI
- Equipment:** Oscilloscopes, Digital Multimeters, Microcontrollers, Automatic Test Equipment, VNAs, Vision Systems, 3D printers, Logic Analyzers
- Experience:** **Electric Vehicle Engineering Intern/ Hitachi Astemo, Greenfield, IN** **May 2024-Aug 2024**
- Investigated root causes for critical electromechanical and controls failure on power control unit assembly production line to reduce down time, improve fault identification and decrease manufacturing cycle time
 - Addressed production and efficiency concerns through Allen Bradley PLC and Ignition HMI updates
 - Prepared test procedures and debugged faults on electrical characteristics and insulation resistance testers
- Sophomore Resident Tutor/ Rose-Hulman Institute of Technology, IN** **Sep 2023- Dec 2024**
- Facilitated over eight exam review sessions and held weekly individual study hours groups of students
 - Received positive feedback from participants leading to a notable increase in exam scores by two letter grades
- Grader and Lab Assistant/ Rose-Hulman Institute of Technology, IN** **Sep 2022- Dec 2024**
- Graded assignments and lab assisted for six courses in 200 and 300 level electrical engineering courses
- STEM mentor for EMERGE program/ Rose-Hulman Institute of Technology, IN** **Oct 2022- Feb 2024**
- Led mentorship of thirty freshmen female high school students, enhancing awareness of STEM career pathways through interactive discussions and activities
 - Monitored three field trips to enhance the students' experience of STEM industry and university environment
- Solar Power Engineering Intern/ ALEC Energy, Dubai, UAE** **Oct 2019- Nov 2019**
- Studied load schedules and single line diagrams for Dubai Hills Mall solar project
 - Observed operation of solar inverters and learned about design parameters for Solar PV plants
 - Analyzed efficiency of solar power control system for Nestle Solar Plant
- Projects:** **Real-Time ASL Detection** **Jul 2024- Aug 2024**
- Leveraged transfer learning on AlexNet to recognize and translate American sign language gestures with 98.5% accuracy
 - Applied live updating text translations with real-time webcam footage with 3s delay for CNN classification
- Fruit Finder Algorithm** **Jul 2024- Aug 2024**
- Implemented pre-processing, pixel extraction, threshold detection, masking and morphology techniques to recognize key fruit objects in images
 - Assessed performance of algorithm across three key test images with bounding boxes assigned per fruit object
- Function Generator** **Jul 2024- Aug 2024**
- Devised PCB for direct digital synthesis AWG using ATmega328p microcontroller and AD9833 chip
 - Developed daughter board for DC-DC 120V-12V-5V buck power supply for function generator
- Buck-Boost Power Supply** **Feb 2024- May 2024**
- Designed 12V to -25V DC-DC negative voltage power supply with 2A current limit and 100mV output ripple
 - Streamlined PWM circuitry for IC control and isolated gate driver with over-voltage clipping circuit
 - Engineered a charge pump for the negative voltage supply and ensured reliability with operational amplifier monitoring system
- Low Pass Filter Power Integrity Analysis** **Dec 2023- Feb 2024**
- Constructed 2nd order low pass pi-filter for frequencies less than 100MHz with 40dB/dec drop off
 - Refined the parasitic model using ANSYS HFSS, ensuring accurate simulation results that aligned closely with measured outputs and enhanced overall design reliability for frequencies below 100MHz

