

Antonio Ristevski

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CAREER FOCUS

Motivated computer and electrical engineering student with a strong foundation in circuit design, PCB development, and electronic sensor systems. Experienced in debugging, validation, and integration of hardware for automotive applications. Skilled in using industry-standard tools such as oscilloscopes, multimeters, and Altium Designer to support concept design, design verification, and product validation.

EDUCATION

Bachelor of Science in Engineering, Computer Engineering
Oakland University, Rochester MI

September 2022 - December 2025

GPA: 3.58

RELATIVE EXPERIENCE

Formula SAE Electrical Technical Director

May 2024 – Present

- Directed a 20-person electrical engineering team through **40+** concurrent projects, overseeing design process integration of critical low-voltage subsystems, including battery management, telemetry, and power distribution.
- Led development cycles from schematic design to PCB fabrication and final assembly, introducing design-for-manufacturability practices that improved reliability and reduced failure rates across subsystems.
- Engineered and deployed real-time data acquisition and analysis tools, enabling in-situ vehicle diagnostics and tuning, resulting in a **104% increase in testing day efficiency** and improvements in on-track performance.
- Collaborated with motorsport engineers and industry mentors to align electrical system design with professional motorsport standards, enhancing the team's technical rigor and system reliability.
- Integrated embedded systems and sensor networks for telemetry, driver feedback, and fault detection.

High-Performance Hardware Intern, Intrepid Control Systems

May 2024 – August 2024

- Engineered critical components of a next-generation embedded hardware product, collaborating directly with cross-functional teams to drive the product from concept to release.
- Conducted hardware benchmarking and regression analysis across multiple iterations to optimize boot times, ensure system stability, and maintain or exceed performance targets.
- Executed debugging using oscilloscopes, logic analyzers, and custom diagnostic tools to resolve hardware-software integration challenges and optimize embedded system functionality.
- Developed and integrated embedded solutions and hardware interfacing using protocols such as SPI, I2C, UART, and CAN within real-time system constraints.

PROJECTS

Complete Vehicle Electrical Harness Design and Manufacturing

- Designed and built a full-vehicle wiring harness integrating **60+** sensors, ECU, dual daisy-chained CAN buses, and a data logger.
- Cut harness manufacturing time from **45 to 13 hours** by developing a repeatable, staged process: wire outlining (spreadsheet), 3D and 2D layouts, layup and splicing, continuity testing, concentric twisting, termination, and final validation.
- Reduced harness weight by **44%** through wire routing, voltage drop-based gauge sizing, and lightweight component selection.
- Developed a custom wire gauge calculator to optimize thermal, electrical, and packaging constraints.

Indirect Cylinder Pressure Measurement

- Multi-channel 100ksp/s digital signal processing and logging circuit design, layout, manufacturing, testing and calibration
- High bandwidth 0 to 100 micro strain to 0 to 5V strain gauge amplifier circuit with cascading amplifiers and analog filtering.

AI-Driven RC Car With Fuzzy Logic Motor Control & Computer Vision for Playing Live Pac Man

- Developed a fuzzy logic controller for motor control, enabling an RC car to autonomously navigate and avoid obstacles while tracking or evading a target.
- Built a computer vision neural network to detect and classify tagged targets for real-time avoidance behavior.
- Deployed embedded AI on an ESP32 microcontroller, integrating sensor input, vision processing, and control logic.

Body Control Module

- Implemented a Darlington transistor array to activate 12V relays with a 3.3V digital output.
- Designed a PCB to distribute power to high and low current circuits. Reducing the EMI produced by high current traces through a neighborhood PCB design and extensive ground planes.

RELATIVE TECHNICAL SKILLS

Software: GitHub | Vehicle Spy | Vitis | Espressif IDE | Google Suite | Microsoft Suite | CatiaV5 | SolidWorks 2024 | Altium Designer

Programming Languages: Python | MATLAB | VHDL | C | C++ | Embedded C

Electrical Technology: Oscilloscope | Multimeter | Function Generators | Reflow Ovens | Soldering Irons | Heat Stations