# Sandro Petrovski

https://petrovski.cc | Detroit Metropolitan Area

## *Education*

**University of Michigan**, Ann Arbor, MI.
*B.S.E. Computer Engineering* *May 2026*
GPA: 3.43 / 4.0 (Major GPA: 3.73)
Relevant courses: Data Structures & Algorithms, Intro Logic Design, Intro Circuits, Discrete Math, Linear Algebra

## *Work Experience*

**N.S. International Ltd.,** Troy, MI
*Hardware Design Intern* *May 2024 – Aug. 2024*

- Analyzed circuitry across several products, identifying ~$20k in potential value-add savings for FY24
- Designed and manufactured an in-house flashing jig, reducing costs by ~85% per unit compared to third party
- Conducted thorough testing and troubleshooting with a multimeter, resolving connectivity issues with jig
- Investigated cost discrepancies across products, recommending process improvements to ensure accuracy
- Resolved cable harness supply chain delays by negotiating with third-party vendors

**Northern Industrial Mfg.**, Harrison Twp., MI
*IT Project Intern* *Jun. 2023 – Aug. 2023*

- Overhauled ISO 27001 (information security) compliance documentation, securing retention of top customers
- Implemented AI-driven marketing strategy, improving website search engine ranking for industry keywords
- Established real-time warehouse inventory tracking with Google Sheets, optimizing cross-building workflow
- Developed in-house timer matrix in Excel with VBA for monitoring uptime of deburring machines

## *Projects*

**Banking Transaction Backend** (Data Structures & Algorithms Course: C++)

- Banking simulator that processes transactions, manages user accounts, and detects fraud
- Selected hashmap and priority queue as optimal data structures to adhere to strict memory and runtime reqs

**Arcade Machine** (TauPau Engineering: Raspberry Pi, Rust, GDScript, Altium PCB)

- Stand-up arcade machine with joystick and buttons, including games from the 1980s era
- Linked controller inputs to RPi via custom PCB, mapping them to keystrokes through low-level Linux program
- Wrote menu interface and games (incl. movement algorithms) in GoDot game engine using GDScript

**Nixie Tube Clock** (TauPau Engineering: ATMega, Arduino C, Altium PCB)

- 6-digit alarm clock using Soviet-era high-voltage gas discharge (Nixie) tubes
- Three multiplexers handle switching of 10 cathode lines and 6 180V high-side anode drivers
- Next steps: board manufacturing; stopwatch/timer, timekeeping, and multiplexing logic in Arduino C

## *Skills*

***Programming:*** C, C++, Rust, Python, Java, Kotlin, LabVIEW, web stack (HTML/SASS/TS), Git versioning
***Hardware:*** Altium Designer (circuit board design), breadboard prototyping, LTSpice circuit simulation, EMC testing
***Platforms & Protocols:*** Raspberry Pi, Arduino, ATtiny/mega, STM32, I2C, UART, CAN bus

## *Extracurriculars*

**TauPau Engineering**
*Co-Founder* *Nov. 2022 –*

- Co-founded a small project team focused on proliferating electronics/STEM knowledge via multimedia
- Maintain website showcasing documented, open-source projects available on GitHub
- Co-lead cross-functional team including mechanical designer, graphic designer, and consultant
- Manage Docker containerized web, email, and content delivery systems on Linux server

**Michigan Mars Rover**
*Embedded Hardware Member* *Sept. 2023 –*

- Developed PCB schematic and layout for scientific instrument board in small team
- Standardized component labeling on motor controller board to streamline manufacturing
- Inspected faulty board to debug malfunctioning H-bridge circuit; tested with STM32Cube IDE