

Sandro Petrovski

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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