BRANDON TENDILLA

Evanston, IL | 646-474-8286 | brandontendilla2028@u.northwestern.edu| linkedin.com/in/brandontendilla

EDUCATION

Northwestern University   Evanston, IL
Bachelor of Science in Electrical Engineering   Anticipated June 2028
Minor in Artificial Intelligence   GPA 3.65/4.0

SKILLS

Programming Languages: C++, C, Arduino, Python, Verilog, MATLAB, HTML & CSS
Software: Altium, LTspice, GitHub, Git, Docker, RapidHarness, SolidWorks, Office 360
Languages: English, Spanish

EXPERIENCE

VAK Embodied Systems Lab, Northwestern University   Evanston, IL
Undergraduate Research Assistant   February 2025 – Present
- Developing a dual-mechanism **pressure** and **pose sensing** system using a conductive knitted glove with **capacitive** and **piezoresistive** threads, as part of ongoing research toward a future publication
- Collected and analyzed **8 hand and 5 finger gestures** with capacitive sensing, supporting the development of a **machine learning**–based recognition system for VR and other untethered, lightweight applications
- Designing custom polling circuits and a **low-power wrist-mounted PCB prototype** to enable multi-channel sensing with reduced crosstalk and power usage

Formula Racing, Northwestern University   Evanston, IL
Low Voltage Engineer   Sept 2024 – Present
- Designing a custom low voltage monitor with current sensing for a cooling system, overvoltage detection for shorts, **dual-line eFuse protection**, **CAN bus** data transmission, and low-voltage regulation on an EV car
- Validated a custom PCB for automotive power distribution using **oscilloscopes and bench power supplies**, verifying **a PWM-controlled cooling** system designed to keep the powertrain cool
- Developed an **electrical harness** for the internal dash box integrating **2 custom PCBs** and a shutdown circuit, ensuring reliable power management; implemented using **wiring harness design and system-level testing**

FIRST Robotics, Townsend Harris Highschool   Queens, NY
Lead of Electrical   Sept 2021 – June 2024
- **Led a 20-member sub team**, debugging hardware issues under pressure, contributing to winning the 2022 Tech Valley Regional and being a finalist at the 2023 NYC FIRST Robotics Regional
- Designed electrical harnesses for **3 robots** and created a curriculum to train members in **soldering**, **crimping**, **circuit analysis**, **CAN bus**, and **debugging**
- **Co-directed** an outreach initiative teaching **116+ students** in underserved communities STEM skills including **programming**, **robotics**, and design with Lego Mindstorms, Scratch, and MakerBots

PROJECTS

Mobile and Ubiquitous Computing Course, Northwestern University   Evanston, IL
Knitted Hydraulically Amplified Self-Healing Electrostatic Actuator   Apr 2025 – June 2025
- Designed and fabricated **soft electrohydraulic actuators** using conductive cloth electrodes and heat sealing, enabling a simplified, low-cost process suitable for educational use
- Built and tested custom **high-voltage drive circuitry** (3–9 kV) using **function generators, amplifiers**, and **oscilloscopes**, achieving >190,000 reliable actuation cycles at 6 kV with enhanced strain output

ADDITIONAL

Awards: Dean's List, Northwestern University (2025-Present)
Relevant Coursework: Fundamentals of Circuits, Mobile and Ubiquitous Computing, Advanced Digital Design, Fundamentals of Signals and Systems, CMOS VLSI Circuits Design