Jonathan Thomas

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EDUCATION

New York University – Tandon School of Engineering Brooklyn, NY

Bachelor of Science in Electrical and Computer Engineering Expected **May 2028**

- **Cumulative GPA:** 3.82
- **Awards:** Dean's List (all semesters), Learn and Compete 1st Place (NYU Motorsports)
- **Relevant Coursework:** Digital Logic, Data Structures and Algorithms, Electronics 1, Computer Architecture, Signals and Systems, Object Oriented Programming in C++

EXPERIENCE + LEADERSHIP

NYU Motorsports Manhattan, NY

High Voltage Lead Sep 2025 - Present

- Lead a 6 person high voltage subteam and run design reviews with the electrical lead and team alumni
- Head accumulator assembly: from soldering, laser cutting custom cell insulation sheets, to operating waterjet cutter to fabricate steel enclosure walls
- Reviewed accumulator charging cart safety and wrote the team's operating procedures

NYU MakerSpace Manhattan, NY

Teaching Assistant Jan 2026 - Present

- One of 4 waterjet operators; made 300+ metal and plastic cuts for Tandon research labs and project teams
- Train other TAs on waterjet and maintain machine so it stays running for the whole shop
- Teach weekly workshops on 3D printers, laser cutters, shop safety, training 100+ patrons to date
- Certified on 15 shop machines recently the ShopBot Desktop and Othermill CNC machines

PROJECTS

FSAE Tractive System Control Board *(PCB Design, KiCad, High Voltage)* October 2026 - Present

- Redesigning the team's previous year HV Precharge and Indicator PCB, adding lamp check logic that lights the Tractive System Status Indicator, Ready to Move Light, BMS and IMD Cockpit Lights on GLV power up
- Fixed Accumulator Voltage Indicator, which failed electrical tech inspection last year by designing a circuit powered directly from tractive system (up to 480V) using a 900V current regulator and 56V Zener threshold
- Found a latching failure in IMD shutdown relay and designed MOSFET circuit so latch engages

SoundForge *(PCB Design, Verilog, CMOD A7, Altium, Vivado)* June 2026 - Present

- Designed a custom mixed signal carrier PCB using Altium providing audio peripherals for CMOD A7 FPGA
- Developed I2S master RTL in Vivado to drive the ADC/DAC clocks (SCKI, BCK, LRCK) across clock domains at 48kHz
- Built audio effects in Vivado such as bit-crusher to process audio signals from a keyboard and guitar

FSAE Fuse Rig *(Fusion 360, PlatformIO, Teensy, C/C++)* June 2026 - Present

- Designed copper fuse test rig in Fusion 360 to validate cell fuses for the FSAE accumulator, resolving a tech inspection failure.
- Teensy firmware that logs current (Hall Effect sensor) and temperature (thermistor) during each test.

Accumulator BMS Temperature Monitoring Firmware *(C/C++, Teensy, CAN Bus)* Apr 2026 - May 2026

- Developed complete firmware in C++ for 6 custom BMS monitoring boards on a Teensy microcontroller, implementing 8 channel multiplexer thermistor array (40 total sensors) with Beta equation for resistance to temperature conversion for real time cell thermal monitoring
- Integrated 500kbps CAN bus communication via FlexCAN_T4 to transmit max, min and average pack temperatures to an Orion BMS2 through PlatformIO Script

SKILLS

- **Coding + HDL Languages:** Python, C++, Verilog
- **EDA/CAD/Software Tools:** KiCad, Altium, Fusion 360, Vivado, Git, Github, Office 365, MATLAB
- **Lab Equipment + Fabrication:** Oscilloscopes, Digital Multimeters (DMM), Waveform Generators, Power Supplies, 3D Printers, Laser cutters, Soldering, Waterjet, Power tools