Andrew Zeng

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EDUCATION

Northeastern University **Boston, MA**
B.S. in Electrical Engineering, Minor in Computer Science *May 2028*
Honors: NU College of Engineering Merit Scholarship, Global Scholars Program
Activities: NU Lunabotics, NU Students for the Exploration and Development of Space, Club Golf , Club Spikeball
Relevant Coursework: Embedded Design, Discrete Structures, Fundamentals of CS II, Computing for Engineers

SKILLS

Software & Signal Processing: Python, C++, MATLAB, JavaScript, FMCW Radar DSP, FFT/Doppler Analysis, C
Hardware & Design: SolidWorks, FEA, AutoCAD, KiCad PCB Design, PLC Ladder Logic, Arduino, I²C

EXPERIENCE

Westinghouse Electric Corporation **Pittsburgh, PA**
Electrical Engineering Intern (OEM Parts Division) *April 2026 – Present*
- Design mechanical and electrical hardware for breaker product lines servicing AP1000 and operating PWR plants
- Led multiple breaker projects, owning design, controls, and validation independently across an engineering team
- Performed root-cause failure analysis on circuit breakers, identifying defects, and revising refurbishment procedure

University of Michigan **Ann Arbor, MI**
Research Intern *May 2025 – Present*
- Interpret sensor data with Python machine learning systems on custom PCBs for autonomous driving vision
- Develop Python-Manim visualizations for university lectures on core automotive electrical engineering topics
- Integrate advanced perception and control systems in RC car platforms illustrating autonomous driving concepts

PROJECTS AND PUBLICATIONS

Circuit Breaker Stress Testing Device (Westinghouse Electric) *May 2026 - Present*
- Modeled test frame, baseplate, and switch-flipping linkage in CAD to withstand forces from 10-100lb via FEA
- Integrated linear actuator, PLC, limit switch, force sensor, and power distribution for repeated automated use
- Programmed ladder logic for cycle counting, end-of-travel interlocks, and fault handling across full test sequence

DB-50 Breaker Replacement Cradle (Westinghouse Electric) *May 2026 - Present*
- Designed adapter cradle in CAD to mount modern breakers in legacy DB-50 cells, preserving previous footprint
- Routed line and load side connections to match original DB-50 terminal geometry, maintaining electrical clearance
- Verified fit and ran FEA analysis on cradle mounting points under breaker weight and short-circuit reaction loads

FMCW Radar (Personal) *Feb 2026 - Present*
- Design and implement FMCW mmWave radar system, capturing raw IQ data and processing through DSP pipeline
- Develop and validate signal processing algorithms (FFT-based, Doppler, detection, target tracking) using Python
- Integrate end-to-end hardware and software producing demos, technical documentation, and radar visualizations

Custom Bus PCB (Lunabotics) *Jan 2026 - Mar 2026*
- Designed a custom I²C backbone PCB in KiCad to coordinate sensor boards across the rover's avionics stack
- Create schematics in KiCAD, including signal routing, connectors, and interface logic for board communication
- Implement power management architecture, distributing power to sensor components ensuring correct output

Self-Driving RC Car (Personal) *May 2024 - Aug 2024*
- Designed in AutoCAD and fabricated 3D-printed and laser-cut car utilizing Arduino Nano hardware and sensors
- Achieved autonomous navigation through Python-trained ML models with live ultrasonic and IR sensor feedback
- Developed vehicle models using Python, integrating Arduino-based feedback and AutoCAD chassis components