

Vivian Zeru

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EDUCATION

Vanderbilt University | Nashville, TN

Masters of Science (MS), Electrical and Computer Engineering (ECE)

Anticipated May 2027

Accelerated Graduate Program in Engineering

January 2025 - May 2027

- Accepted due to senior standing (86+ credits required, 92 completed) & 3.5+ GPA to earn MS/BE degrees

Bachelor of Engineering (BE), Electrical and Computer Engineering (ECE)

Anticipated May 2027

Relevant Coursework: Electronics, Computational Electromagnetics, Digital Signal Processing, Circuits, Digital Systems (RISC-V), Analog Circuits and Systems, Data Structures, Rapid Prototyping, Engineering Management

Cornelius Vanderbilt Scholar

March 2023

- Awarded to less than 1% of applicants for their merit-based leadership and community achievement

EXPERIENCE

Du Group Vanderbilt | Nashville, TN

February 2025– Present

Undergraduate Research Assistant

- Micro-soldering for PCB assembly using SMD solder (hot air station) for QFNs & WLCSPs
- Studied industry standards for components, schematic reading, and soldering on microscopic circuits
- Analyzing circuit design for a PCB (using Eagle) for a wearable sensor to measure health monitoring data (ECG, EEG, Body Temperature, harmonics in voice using a microphone, NIRS, etc.)
- Understand communication protocols between components in wearable sensor (SPI, I2C, UART)

United Parcel Service (UPS) | Louisville, KY

June 2024 – August 2024

Information Services Management (ISM) Intern

- Developed features for EMS (Employee Management System); application/web development (full-stack)
 - Implemented, debugged, and tested add/edit ability to help schedule information
 - Presented to senior leadership/interns; 2/20 interns chosen to present to the OPT President
- Built application in 24 hours (Hackathon): displays 4 UPS trailer asset details detected with AI
 - Projected to save over \$33M; selected top 9 from 50+ teams worldwide by senior leadership
- Considered user needs by designing and implementing 1 extra feature (in addition to my assigned tasks)

ECE Tech Crew Vanderbilt | Nashville, TN

February 2024 – Present

Lab Proctor, Leadership Team, Founding Member

- Train 9 lab proctors and assist students on Keysight test equipment (power supply, multimeter, oscilloscope, waveform generator, soldering irons) on senior design projects, research, hobbyist work
- Promote electronic creations and hardware design in the ECE department/general Vanderbilt community
- Grow organization from 7 to 30+ members by creating merchandise, flyers, signs, and posters while managing professional communication on Slack and email between students and ECE faculty
- Chosen to present to the ECE External Advisory Board at Vanderbilt on behalf of the organization

Engineers Without Borders | Nashville, TN

September 2023 – Present

Vice President (2025), Secretary (Fall 2024), Electronics Subcommittee of EPA Rainworks Project, External Affairs

- Building/iterating/testing device gathers data on stormwater runoff (turbidity, salinity, conductivity, flow rate, pH); PCB design, wiring schematics, utilizing a microcontroller and ADC, sensor testing/calibration
- Communicate with weekly emails & 8+ designed instagram posts to update members/alumni (@vu.ewb)

PROJECTS

Syringe Pump Project

November 2024 – December 2024

- Built device & enclosure, utilizing stepper motor & linear actuator to push 20 & 10 mL syringe (team of 4)
- Wired/programmed Arduino Uno: create position reset buttons, potentiometer to select flow rate (0.1-5 mL/min), LCD to display rate/time, limit switch to detect liquid, RGB to show status, power button
- Implemented the ability for device to run on its own through a wired power supply

SKILLS

- **Programming/Frameworks:** Arduino IDE (C++), Java, Python, MATLAB, Angular, Verilog
- **Software:** Altium, Eagle, LTSpice, Mathematica, Intel FPGA & Quartus, Fusion 360, Office Suite