Charles Verity

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Education

Northeastern University, Boston, MA — May 2027
Bachelor of Science in Computer Engineering and Computer Science — GPA: 3.54/4.0

Activities & Honors: IEEE, Wireless Club, Engineers Without Borders, Dean's List, VICEROY DECREE Scholar

Relevant Coursework: Circuits & Signals, Fundamentals of Electronics, Embedded Design, Fundamentals of Networks, Computer Systems, Programming with C++, Fundamentals of Computer Science 2, Discrete Structures, Computing Fundamentals

Queen's University of Belfast, Belfast, Northern Ireland, UK — Sep 2023 – Dec 2023
Study Abroad through N.U.*in* Program

Berkeley High School, Berkeley, CA — Jun 2023
Activities & Honors: President of Quiz Bowl Club, Fencing, BIHS Leadership, California State Seal of Biliteracy

Skills

Applications: AutoCAD, SolidWorks, Microsoft Office, LTSpice, Quartus Prime, 3D Printing, Laser Cutting
Programming: MATLAB, Python, Arduino, Java, C (Learning), C++, UNIX/Linux (Learning)
Electronics: Circuit Analysis/Design, Basic Signal Processing (Oscilloscope/Signal Generator), Soldering
Languages: Mandarin Chinese

Technical Projects

16-bit CPU Simulation — Jan 2025
- Designed and implemented a 16-bit CPU emulator in C, based on a defined ISA, featuring instructions such as SET, LOAD, STORE, ALU operations, and more
- Simulated CPU behavior and memory interactions, with instruction fetch, decode, and 16-bit execution

Human ECG Signal Processing and Analysis Project — Nov 2024 – Dec 2024
- Designed and implemented analog circuit with an instrumentation amplifier, high-pass, and low-pass filters to process raw ECG signals
- Integrated an A/D converter for signal digitization and scaling to maximize resolution while avoiding saturation
- Applied MATLAB digital filtering techniques and FFT analysis to reduce noise and estimate heart rate variability

UN Sustainability Goal Museum Exhibit — Feb 2024 – Apr 2024
- Designed and presented sustainable energy use exhibit for elementary students, utilizing AutoCAD for designs, SolidWorks prototypes, Arduino circuits, and incorporating laser cutting and 3D printing for physical models.
- Applied Kepner-Tregoe, GO-NOGO analyses, flowcharts, and BOMs, for project planning and strategy review

Employment Experience

Peer Mentor — Jan 2025 – Present
Northeastern University College of Engineering, Boston, MA
- Support first-year engineering students in seminar course by managing attendance, organizing icebreakers, and facilitating discussions on academic/resume planning

Promotional Product Specialist — Feb 2020 – Mar 2024
Branding Boulevard, Berkeley, CA
- Applied vinyl heat transfers to apparel and accessories, executed laser engraving for metal and glass items, and managed packaging and customization for 1000+ unit orders
- Ensured high quality presentation and brand alignment in corporate gift sets across large scale orders

Interests

Collecting coins, banknotes, stamps, vintage electronics, and video game consoles; history and trivia