

WORK EXPERIENCE



NEUMA, NY

Founding Hardware Engineer

July 2024 – Present

Neuma is developing a neural interface in the form of earbuds that can read your lips.

- Led end-to-end hardware development across 3 integrated prototype iterations in 8 months.
- Delivered investor-facing neural decoding demos that performed flawlessly across multiple locations — even in RF-heavy environments.
- Sole engineer responsible for nearly all tangible hardware development — owned firmware and hardware system integration; co-led EE, ME, and ID efforts with contractors.
- Worked closely with a computational neuroscientist and ML engineer to refine decoding performance through tight hardware–software feedback loops.

Technical Scope:

- **Firmware:** *FreeRTOS, ESP-IDF, high-throughput DAQ (64-ch 2kHz EMG, 192kHz ultrasound, 6-axis IMU), Bluetooth Classic/LE, Wi-Fi, TCP/IP, Python integration*
- **Electrical:** *Altium Designer, board bring-up, analog signal analysis (acoustic, bio-signals), digital signal debugging (SPI, I2S, I2C), RF shielding*
- **Mechanical:** *Rapid CAD for test rigs and wearable prototypes, in-house 3D printing (FDM/mSLA), fit and force studies, ergonomic testing, hands-on assembly*
- **ID:** *Built, critiqued, and tested ID prototypes for iterative design*



IMAGE ENGINEERING, MD

Embedded Electronics Engineer

April 2024 – July 2024

Developed test and production firmware for a networked pyrotechnic system used in Universal Studios Florida.

- Brought up an STM32-based multi-board system with Modbus/TCP, UART, and I2C communication; delivered field-tested firmware enabling synchronized effects control and diagnostics.



TOMORROW LAB, NY

Electrical Design Engineer

June 2021 – April 2024

Developed and launched first-of-its-kind consumer hardware for clients like Nerf, IMAX, and Citizen, working in a multidisciplinary team across electrical, firmware, and mechanical domains.

- Designed schematics and PCBs; handled bring-up, embedded firmware, and power testing.
- Managed eBOMs, sourced components, and worked with PCBA vendors for turnkey fabrication.
- Integrated BLE with Citizen's app team and optimized for DFM to streamline cost and assembly.
- Interfaced electronics with custom housings and mechanisms; conducted electromechanical performance analysis.
- Mentored EE intern and co-hosted Potentially Genius, a DigiKey-backed YouTube series.

EDUCATION

NEW YORK UNIVERSITY

Sep 2019 - May 2021

MPS, Interactive Telecommunications (ITP)
4.0 GPA, Tisch Scholarship, Red Burns Scholarship

CITY UNIVERSITY OF HONG KONG

Sep 2014 - May 2018

BSc, Creative Media (Computing)

Valedictorian • Dean's List • MIT Entrepreneurship & Maker Skills Integrator Champion • Disney Imagination Design Finalist

SKILLS

Hardware & Firmware

- **Embedded:** STM32 • ESP32 • nRF52 • FreeRTOS • Zephyr • BLE • Wi-Fi • TCP/IP
- **Electrical:** Altium • Eagle/Fusion 360 • board bring-up • DAQ • low-power systems • Motor Control
- **Interfaces:** UART • SPI • I2C • Modbus/TCP • JTAG
- **EE lab tools:** DMM • oscilloscope • logic analyzer • BGA/0201 rework

Prototyping & Testing

- Fusion 360 • 3D Printing (FDM/mSLA) • Machine Shop Tools

Software & Tools

- Python • Git • Linux • SQL • C/C++ • ML (PyTorch) • MERN stack

SELECTED PROJECTS

LIBRARY BOOK

by * Library (client @ Tomorrow Lab)

Led initial system design and conducted LLM performance and power testing across different SoCs, including Rockchip, running LLaMa on Ubuntu.

THE MINT

by Richualist (client @ Tomorrow Lab)

Designed control system for a smart styling wand with motorized dispensing and PID heater control.