

Levi Neuwirth

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EXPERIENCE

xAI

May 2025 – August 2025 · Remote

Contributed to the training of `grok-code-fast-1`, xAI's agentic coding model (publicly launched August 2025).

- Architected LLM integrations into autonomous agent frameworks, orchestrating 20 tools across thousands of production workflows and codebases.
- Diagnosed and resolved 50+ agentic failures, lifting tool-execution success rates by 15%+, cutting fatal tool-usage errors by 40%+, and reducing API usage by 20%+.

NeuroAI LLC — None

March 2026 – Present · neuroai.health

Early-stage venture of academics and clinicians integrating deep learning, reinforcement learning, and generative AI into clinical and research workflows. Leading model development, deployment infrastructure, and system design.

Shu Laboratory, Brown University Department of Neurology — Undergraduate Researcher and Technical Lead

October 2023 – Present · Providence, RI

- Technical lead on **NeuroPose**, a 3D pose-estimation and kinematic-analysis system for neurological-recovery research. Built end-to-end pipeline: Python/TensorFlow deep-learning inference, MATLAB statistical post-processing, Rust backend with HTML/JS frontends. System supports four externally-funded sub-projects; clinical-implications manuscript in preparation.
- Co-lead developer on an **order-invariant ICD-10-CM embedding model** for 30-day readmission (AUC 0.75 vs 0.66 CCI baseline) and postdischarge mortality prediction (AUC 0.86 vs 0.78), Deep Sets architecture trained on 113M+ adult hospitalizations from the HCUP Nationwide Readmissions Database. Preprint under review at *JAMA Network Open*; public calculator deployed at levineuwirth.github.io.

Independent Research Contracting — Anthropic, OpenAI, Mistral

2025 – Present, as-needed

Code and mathematics contributions for agentic workflow design, task evaluation, model safety, and red-teaming.

PROJECTS

Post-Quantum Cryptography on x86 AVX2 *March 2025 – Present.* Micro-architectural study of SIMD contributions to ML-KEM / Kyber on Intel AVX2, conducted on Brown's OSCAR HPC cluster. Hand-written AVX2 assembly achieves $35\text{--}56\times$ speedup over compiler-optimized C for core NTT arithmetic; $5.4\text{--}7.1\times$ end-to-end KEM speedup. Full statistical analysis (Mann-Whitney U, Cliff's δ , bootstrapped CIs). Technical report and reproducible artifact public; Phase 2 (PAPI, RAPL) and Phase 3 (ARM, RISC-V) in progress.

Weenix *January 2025 – Present.* Full Unix-like kernel in 10,000 lines of C: virtual memory, VFS, system calls, threading, device drivers and interrupt handlers, and file systems with custom linker support for running userspace x86-64 ELF binaries. Brown CS 169.

Networking Stack from Scratch *October 2024 – July 2025.* TCP/IP, RIP, UDP, and DNS implementations in Go, supporting file transmission of up to 1 GB across networks of up to 8 virtual machines.

EDUCATION

Technical University of Denmark (DTU) — MSc in Computer Science and Engineering

September 2026 – expected 2028 · Kongens Lyngby, Denmark

Brown University — Sc.B., Mathematics and Computer Science

August 2022 – May 2026 · Providence, RI

GPA 3.8/4.0. Brown Undergraduate Teaching and Research Award (UTRA), individual recipient, Summer 2024.