

Bennett Lee

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Education

University of Michigan College of Engineering | Ann Arbor, MI

[Expected May 2028]

- B.S.E Computer Science at the College of Engineering, GPA: 3.89/4.0 (Honors), Dean's Honor List
- Michigan Research and Discovery Scholars (MRADS), Kappa Theta Pi Professional Fraternity
- Awards: William J. Brainstorm Freshman Prize (top 5% of cohort), Public Service Commission Scholarship
- Relevant coursework: Data Structures, Discrete Mathematics, Linear Algebra in ML, Introduction to Robotics

Experience

Computational Researcher | University of Michigan — Otolaryngology & Translational Oncology Lab

[Aug 2026 - Present]

- Built Python pipelines for mutation and copy-number analysis across tumor-normal sequencing samples
- Developed QC workflows to detect contamination and quality failures before downstream genomic analysis
- Generate standardized genomic summaries and analysis-ready outputs to support ongoing oncology studies

Machine Learning Engineer | Home Team Science and Technology Agency (HTX)

[Jun 2026 - Aug 2026]

- Investigated catastrophic forgetting in a 24B-parameter LLM across LoRA, CPT, and full-parameter SFT
- Optimized distributed training across 8× H100 GPUs using FSDP2, sequence packing and fused kernels
- Built evaluation pipelines with eval-harness to measure domain adaptation against general-capability retention
- Improved legal-domain performance by 12.7% while keeping degradation on general-purpose tasks within 3%
- Delivered fine-tuned models into deployed AI tooling for 10,000+ personnel, improving workflows by ~20%

Machine Learning Researcher | University of Michigan — Computational Vascular Biomechanics Lab

[Aug 2025 - Jun 2026]

- Built expert-annotated 3D microscopy datasets and preprocessing workflows for vascular segmentation
- Trained and evaluated an nnU-Net-based 3D segmentation model to reconstruct coronary microvasculature
- Achieved approximately 83% overlap between model predictions and expert annotations on validation data

Army Commando Officer | Singapore Armed Forces

[Jan 2024 - Jul 2025]

- Commanded a 18-men unit in the Singapore army's special forces formation, overseeing operational readiness
- Executed high-stakes operations involving 400+ personnel under stringent time and resource constraints

Project Intern | Cisco Systems

[Oct 2021 - Dec 2021]

- Prototyped an integrated digital-learning platform for Singapore's Ministry of Education with 300+ schools
- Built foundational experience with switching, network architecture, SD-WAN, and cloud-connected systems

Projects

Agent Orchestrator | Python, LangGraph, Arize Phoenix, SQL, Docker, Streamlit

- Built a multi-agent orchestrator that routes subtasks across arXiv, web search, Gmail, and sandboxed code-execution agents
- Added SQL task memory, semantic caching, Phoenix observability and tracing, and ephemeral network-isolated Docker execution

Agent Reliability Harness | Python, Pydantic, Docker, Ollama

- Built a framework-free LLM agent harness with schema-validated tools, permission gating, human approval, and persistent tracing
- Implemented failure injection, deterministic replay, automated regression evaluation to diagnose agent failures across runs

KTP Life App | React, TypeScript, Firebase/Firestore, Figma

- Built the overview for Kappa Theta Pi's fraternity app, reaching 20+ pledges and 200+ brothers to track progress in real time
- Designed the UI/UX in Figma and migrated the feature from hardcoded demo data to Firestore for real-time syncing across users

Autonomous Logistics Trolley | Arduino, Computer Vision, Sensor Fusion, Mechanical Design

- Led development of an autonomous laboratory logistics trolley integrating onboard sensors for obstacle detection and navigation
- Ranked top 5% of 500+ national STEM projects, receiving Bronze and Special Awards at the Singapore Science and Engineering Fair

Skills

AI/ML: PyTorch, Hugging Face Transformers, LoRA/PEFT, Axolotl, lm-eval-harness, LangGraph, LangChain, Arize Phoenix, Ollama

Web/Product: React, TypeScript, Firebase/Firestore, Figma, Streamlit, REST APIs

Programming/Systems: Python, C++, SQL, Git, Linux, Docker, Pydantic, NumPy, pandas, Qdrant, ChromaDB, Google Cloud