Alvin Banh

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Education

Massachusetts Institute of Technology — Cambridge, MA
Bachelor of Science in Computer Science — *August 2022 – May 2026*

Experience

Team Member — July 2025 - Present
Mantis AI — *Cambridge, MA*

- Engineered a biology research agent for gene knockout prediction for computational biology applications
- Architected OpenAI-compatible biology model to enable 75%+ prediction accuracy for cellular viability
- Integrated 5 biological pathways into predictive models, supporting drug resistance analysis

Undergraduate Researcher — June 2024 - February 2025
MIT CSAIL — *Cambridge, MA*

- Collected and analyzed data from **1200+ AI models papers**
- Maintained comprehensive metadata for consistent decision-making, achieving a **80%+ agreement rate**
- Identified emerging trends in AI architectures, informing research directions within the foundational model domain

Engineering Intern — July 2022 - August 2022
Bizlink Holding Inc — *Fremont, CA*

- Researched hardware architecture of **20+ cable and autonomous vehicle (AV) companies**
- Compiled over 30 key performance and design metrics to inform product development
- Synthesized data into 10 comprehensive reports of hardware specifications for cross-functional teams

Projects

Finetuned Multimodal LLM Chatbot with Text-To-Speech Functionality — Feb 2024 – Present

- Implemented the 7B-parameter DeepSeek model to run seamlessly on CPU-only infrastructure
- Achieved a **200% reduction in average latency** through efficient model optimization, improving user retention
- Applied low rank adaptation functionality (LoRA) to fine-tune the model, **decreasing training time by 15%**

COVID-19's Origins Logistic Regression Model — February 2021 – March 2021

- Analyzed 30,000+ genomic sequences comparing COVID-19 and bat coronavirus strains to identify high-risk transmission regions
- Implemented feature reduction methods, achieving a **91% accuracy rate**
- Applied L1 regularization to curb overfitting, ensuring statistically significant predictions across 5-fold validation

Awards

Ruth and Norman Rales Scholar — March 2022
KIPP Public Charter Schools — *San Jose, CA*

- Awarded a competitive four-year scholarship recognizing exceptional public service
- Demonstrated consistent dedication to scholarly pursuits by maintaining a 3.0 GPA or higher
- Strengthened leadership through active participation in annual leadership conferences across the nation

Technical Skills

Programming Languages: Python, JavaScript, Java, C, C++, TypeScript
ML/DL Frameworks: PyTorch, TensorFlow, Keras, scikit-learn
Data & Visualization Libraries: pandas, NumPy, Matplotlib, seaborn, OpenCV, Manim
Web & Backend Frameworks: React, Node.js, HTML/CSS, Express.js, Flask, Django, Tailwind CSS
Developer Tools: Git, GitHub, GitLab, VS Code, IntelliJ, Visual Studio, Linux, Docker, ROS, RViz
Databases: MongoDB, SQL, MySQL, PostgreSQL
Design & Collaboration: Figma, Lucidchart, JIRA, Notion, Adobe Creative Suite