Xiangyu (Leo) Shi

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EDUCATION

Carnegie Mellon University, Silicon Valley
Master of Science, Software Engineering   **September 2025 – December 2026**
- **1st Place**, CMU-SV Hackathon

University of California San Diego
Bachelor of Science, Mathematics - Computer Science   **September 2021 - March 2025**
- **Cum Laude**, GPA: 3.9, Provost's Honors

PROFESSIONAL EXPERIENCE

J. Craig Venter Institute   **June 2025 – August 2025**
Data Science & Machine Learning Engineer
- Developed ML-driven applications for protein structure and stability prediction and integrated them into a researcher-facing web platform (**Express.js** + HTML/JS/CSS) deployed with **Docker and AWS EC2**.
- Built an orchestration layer for ML tool containers, scalable to Kubernetes environments.
- Automated data ingestion and preprocessing pipelines through **Python, Jupyter** and **Bash** scripting, supporting large-scale proteome translation of **thousands of viral sequences** (~20k amino acids each).

Yunming Technology   **January 2025 – June 2025**
Software Engineer
- Engineered a modular **Retrieval-Augmented Generation (RAG)** chatbot system for **CRM** workflows, integrating query reconstruction, semantic search, and SSE-based for real-time responses.
- Boosted knowledge query **accuracy by ~50%** through intention recognition, semantic filtering, and dynamic context reconstruction, significantly improving agent response quality.

Human Internet   **September 2024 – June 2025**
Full Stack Engineer
- Enhanced the humanID developer console by refactoring backend APIs (**Django/REST, MySQL**).
- Redesigned humanID's **Single Sign-On (SSO)** system with **JWT**-based session management, async exception handling, international phone syntax authentication, **Dockerized** for consistent multi-region reliability, **reducing login errors by ~80%**.

SELECTED PROJECTS

SafeBark (CMU-SV Hackathon – 1st Place)   **2025**
- Real-time NLP pipeline converting toxic comments to positive tone using **GPT API** and **Hugging Face**.

Epistasis Bi-Clustering Algorithm (Scripps Research)   **2024 - 2025**
- Reduced pipeline runtime from **16 hours to 10 minutes** through code profiling and algorithmic optimization.

TCDB Classifier Pipeline (UC San Diego)   **2024 – 2025**
- Designed and built **data preprocessing** and evaluation workflow for **large-scale ML classification** tasks.

Teacher Analytics Dashboard (STEMz Learning)   **2024 - Present**
- Developed app for multi-classroom data visualization and chat features, **used by 200+ teachers and students.**

TECHNICAL SKILLS

Languages: Python, JavaScript (ES6+), TypeScript, Java, C/C++, F#, Bash, SQL
Frameworks & Libraries: React.js, Next.js, Node.js, Express.js, Flask, Django, TailwindCSS, LangChain, Socket.IO
Databases & Data Tools: MySQL, PostgreSQL, MongoDB, Redis, PyTorch, NumPy, Pandas, SciPy
Cloud, DevOps & Other Tools: AWS (EC2, S3, Lambda), Azure, Docker, Git/GitHub Actions, Vercel, Render, Linux/Unix, UML, REST APIs, GraphQL, OpenAI API, Hugging Face, Agile, Scrum, CI/CD, PgVector, Nginx