Calvin Xiang

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EXPERIENCE

Founding Software Engineer — **May 2025 – Present**
Ridges AI (Subnet 62, Bittensor Network) — Toronto, ON

- Designed the core **AI agent architecture** (tool-based agent flow, prompting strategy, and problem-solving/patch generation pipeline) that enabled Ridges' agents to hit **SOTA 80% score** on the **SWE-bench Verified benchmark**.
- Created the approval pipeline leveraging **code embeddings** (Voyage Code 3), **HDBSCAN clustering**, and **t-SNE/UMAP** to detect code similarity and track agent evolution, rewarding only genuine innovations.
- Built the agent execution system combining **custom Docker sandboxes** and a **Chutes proxy**, providing secure isolation, reproducibility, and scalable communication for decentralized **SWE-bench** tasks.
- Scaled Ridges into the second largest subnet, from an early-stage **$200K** value to a peak **$100M+ market cap**.
- Led collaboration with a global community of miners, onboarding and supporting **thousands of contributors**, resulting in rapid subnet growth and agent innovation.

Software Engineer — **Jan 2024 - Apr 2024, Sept 2024 - Dec 2024**
Veryon — San Francisco, CA

- Led the development of a mobile android app with **.NET MAUI**, for offline air-tracking.
- Integrated **SQLite** for reliable offline data storage, ensuring functionality in low-connectivity environments.
- Significantly reducing operational delays by developing an AI-driven chat tool using **Python** and **Streamlit**, enabling 300+ engineers to efficiently edit 10,000+ maintenance documents from **AWS S3**.
- Optimized document retrieval by **70%** with a PDF sourcing feature using **AWS Kendra** for faster access.
- Added a text-highlighting feature using **LangChain NLP**, for faster navigation of technical documents.

Software Engineer — **Jan 2024 - Apr 2024**
Matrix Leap — San Francisco, CA

- Designed calling agents using **Grok**, currently utilized by **Bland.ai**, to automate over **200+** business workflows with voice-to-action capabilities.
- Built a coding platform that seamlessly integrated the **Google Sheets API** to source questions, solutions, and metadata, paired with **OpenAI LLMs** to provide personalized, real-time feedback for users.
- Engineered a scalable **FastAPI**-based microservice for automated grading of coding exercises, capable of processing up to **1,000** submissions per minute while consistently maintaining a **99.8%** accuracy rate.

Software Developer Jr. — **May 2023 - Aug 2023**
Equifax Canada Inc. — Toronto, ON

- Built scalable **CI/CD pipelines** with **Jenkins**, improving deployment efficiency and reducing release cycles.
- Helped with the migration **100+ TB** of client data from **IBM AS/400 Servers** to **GCP**.
- Automated data transfers using optimized **bash scripts**, reducing processing time.

PROJECTS

AI Customer Support Plugin

- Designed an AI chat widget using **React** and **Flask**, delivering prompt and efficient customer support.
- Dynamically extracts and utilizes up-to-date product and customer information with real-time data collection pipelines from **ScrapeGraphAI**, allowing for context-aware interactions.
- Integrated a vector database using **PineconeDB** to store and retrieve semantic data efficiently, reducing query latency and enhancing response accuracy.

TECHNICAL

Languages: Python, Java, C, C++, JavaScript, TypeScript, Go, Dart, SQL, HTML/CSS
Frameworks & Libraries: React, Node.js, Next.js, FastAPI, Streamlit, .NET MAUI, **LangChain**
Tools & Platforms: AWS/GCP, Docker/Kubernetes, Git, Supabase, SQLite, Jenkins, Postman, Bash, **Bittensor**
AI/ML: OpenAI, Anthropic, Llama3, HuggingFace, spaCy, **PineconeDB**, AWS SageMaker, **HDBSCAN/t-SNE/UMAP**

EDUCATION

University of Waterloo — **Sept 2022 - Apr 2027**
Bachelor of Mathematics
Relevant coursework: *Applied Cryptography, Real Analysis, Optimization, Network Flow, Mathematical Statistics, OOP*

CERTIFICATIONS

Oracle Certified Java Programmer — **Sept 2023**
Carnegie Mellon PicoCTF Second Place — **Mar 2022**