James Fang

Email | Linkedin | Github | Personal Page

Experience

Rx Jot Oct 2023 – Feb 2025

Software Engineer

- Architected and implemented a system to use large language models (LLMs) to provide medical documentation and appeal letters in oncology prior authorization
- Processed more than $4 million in oncology prior authorizations
- Built tools that reduced the time to process for insurance to process oncology authorization requests by half and reduced denial rates by two thirds
- Launched and maintained the Rx Jot frontend application for users and built the entire backend API to handle requests to generate documentation
- Worked with governmental regulations such as HIPAA and implemented stringent data security practices
- Configured the database to handle the volume of data made by healthcare providers for constant real-time access
- Worked on data science and analytics to extract insights to optimize the prior authorization documentation pipeline to further reduce insurance denials
- Added integration with resources such as NCCN guidelines, PubMed research, FDA indications, ICD & CPT/HCPCS coding
- Engineered LLM prompts to model behavior and eliminated hallucination points of failure
- Validated with users and customers to reduce 95% of user friction and input times by 80%

AbbVie Aug 2023 – Oct 2023

Data Science Intern, Pharmacology/Toxicology Team

- Developed deep learning, computer vision workflows for 24/7, real-time behavioral monitoring of experimental rats

UIUC CS Department Jan 2025 – May 2025

CS374 Graduate Teaching Assistant

- Developed accurate, concise course material for students studying **Algorithms & Models of Computation**
- Held office hours and communicated course concepts in depth
- Graded homeworks and exams

Caesar Laboratory Feb 2022 – Aug 2022

Undergrad Computer Vision Researcher

- Developed novel deep learning pig brain segmentation models to facilitate easier animal brain health research, such as automated measurement of brain volume with 3D segmentation
- Designed U-Net segmentation models and optimized (with superconvergence training & parallelization) to increase segmentation accuracy to 94.2% while cutting training time by 75%

Technical Skills

Languages: Python, JS/TypeScript, Java, C, C++, HTML/CSS (Bootstrap), SQL, Linux Shell
Libraries & Frameworks: React, NextJS, Git/Github, OpenAI/GPT, OpenCV, Pytorch, AWS, Kubernetes, Docker, MongoDB, SQL, Flask
Skills: Generative AI, Prompt Engineering, Fullstack Development, Deep Learning, Machine Learning, Computer Vision, Natural Language Processing

Education

UIUC Computer Science

Master's Degree *Aug 2024 – May 2025*

- Related Coursework: Advanced Algorithms, Computer Security, Machine Learning for Signals, Social Spaces, Advanced Data Structures — **GPA: 3.7**

Bachelor's Degree *Aug 2021 – May 2023*

- Related Coursework: Algorithms & Models of Computation, Data Structures, Database Systems, Machine Learning, Natural Language Processing, Intelligent Agents, Distributed Information Systems — **GPA: 4.0**

Consulting Work

Industrial AI Jun 2025 - Jul 2025

Fullstack / Software Engineering

- Rewrote Industrial AI's core product, a manufacturing ticketing system to reduce factory floor downtime by streamlining communication between operators and the maintenance team
- Integrated Zod schema validation into Google Gemini 2.5 outputs, enforcing type consistency and boosting reliability across the ticketing system
- Built a streamlined, low-friction interface tailored for non-technical factory staff, with plug-and-play onboarding that lets new organizations start using the system productively in under 15 minutes
- Implemented WebSockets for real-time updates and circumventing race conditions across multiple users
- Designed, built and deployed a secure backend on Google Compute Engine with Nginx + Certbot
- Integrated organizational role-based access control (RBAC) security, JWT backend authentication, with WorkOS for organizational sign-on

Mosaic AI Labs (YC W25) Apr 2025 – May 2025

Fullstack / Software Engineering

- Improved AI output quality by designing clearer prompts for Google Gemini 2.5, helping users generate more accurate and reliable results
- Added new features such as an agent pause/cancel button, including implementing additional backend state management to support agent control
- Designed and implemented color wheel UI to simplify color selection, replacing manual RGB input and improving usability
- Integrated Mosaic with downstream video editing tools like Kling by crafting effective prompts and coordinating integration logic
- Reported and documented a bug in a downstream service, improving system robustness and communication between services
- Contributed across the stack, propagated feature changes through both frontend and backend components in a complex codebase