Shuolin (Leo) Yin

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Education

University of Toronto Toronto, ON
Bachelor of Applied Science and Engineering in Computer Engineering + PEY Co-op *Sep 2023 – Apr 2027*

- Recipient of Faculty Of Applied Science And Engineering Admission Scholarship
- Recipient of Edward S. Rogers Sr. Admission Scholarship

Research Experience

University Health Network Toronto, ON
Research Intern *May 2025 – Present*

- Conducting research at WangLab (affiliated with Vector Institute and UHN) under the supervision of Dr. Jun Ma.
- Train and refine **foundation models** on large-scale **both 3D and 2D CT and MRI datasets**, focusing on medical imaging representation learning.
- Develop **data curation & preprocessing pipelines** and **fine-tune models** for the **MICCAI FLARE 2025** challenge.
- Benchmark results on **multi-GPU clusters** and contribute findings, code, and figures to **lab publications**.

The Institute of Automation, Chinese Academy of Sciences (CASIA) Beijing, China
Research Assistant under Prof. Yang Yang, Prof. Jinlin Wu and Sr. PD Zhen Chen *Feb 2024 - Sep 2024*

- Streamlined research on **Medical multimodal large language models (MLLMs)** through systematic literature review and novel experimental design, developing methodology for **MICCAI 2025 submission**
- Engineered an **end-to-end data pipeline** for medical imaging benchmark creation using **Python**, incorporating automated quality checks and custom annotation tools, resulting in **75%** reduction in processing time and **40%** improvement in annotation accuracy
- Developed a **Multimodal evaluation framework** using **PyTorch**, benchmarking **SOTA MLLMs** in **clinical medicine** with metrics for **accuracy**, **robustness**, and **cross-modal consistency**.
- Spearheaded **weekly technical discussions** and authored comprehensive **research documentation**, facilitating knowledge transfer across interdisciplinary teams of **medical experts** and **ML researchers**

Project Experience

EZ-Career - Autonomous AI Job Application Agent Toronto, ON
AI Engineer & Full Stack Developer *Sep 2024 – Present*

- Architected a **state-of-the-art multi-agent AI system** using **OpenAI Agents SDK** with an **Agent-as-Tool** pattern, orchestrating specialized agents for end-to-end job application automation.
- Developed **multiple custom Model Context Protocol (MCP) servers** (**playwright_mcp, user_profile_mcp, user_assistance_mcp, memory_mcp**) providing specialized tools for browser control, database operations, and agent memory management.
- Built a scalable **FastAPI** backend with intelligent browser automation via custom **Playwright/CDP MCP server**, enabling precise web interaction and form filling across complex ATS platforms.
- Engineered a **RAG memory system** using **Sentence Transformers** and **Supabase RPC** with **Human-in-the-Loop (HITL)** design to prevent hallucination and ensure factual consistency across applications.

Echo - AI-Powered Sustainable Fashion Marketplace Global
Lead Developer *Jan 2025*

- Secured **2nd Place in Global Finals** at **BCG & Global Spark 'Hack the Globe'** hackathon as sole developer, building an AI-powered mobile marketplace for sustainable second-hand fashion.
- Developed an **AI stylist agent** using **OpenAI API** and **RAG** for personalized recommendations, integrated with a **swipe-based discovery interface** powered by **GCP Analytics** and **Multimodal LLMs**.
- Implemented **Computer Vision-based product authentication** with custom algorithms for item verification and condition assessment, ensuring quality assurance across the platform.
- Built full-stack application using **React Native (Expo)**, **TypeScript**, **Node.js/Express**, and **Supabase (PostgreSQL)** with **JWT authentication** and **Zod validation**.

ReassurED - Medical AI-Powered Emergency Care Navigator Montreal, QC
Project Lead *Sep 2024*

- Led development of an **AI-driven medical triage system** through a **24-hour** hackathon, integrating **clinical guidelines** and **real-time hospital data** via **React Native** and **Firestore**.
- Implemented an **intelligent triage algorithm** using **Few-Shot Learning** through **medical examples** and **COT reasoning prompts** with **Deepseek-v3**, achieving **90%** alignment with standard **Emergency Severity Index (ESI)** guidelines.
- Built secure backend with **Firestore** and **FastAPI**, implementing **structured medical data processing with SNOMED-CT integration** and web scraped **hospital Data integration** for real-time wait times.
- Developed a **hospital recommendation system** combining **LLM-based assessment** with **weighted algorithm**, factoring in **emergency wait times**, **facility specializations**, and **distance metrics** to reduce patient decision time by **70%**.

Skills

Programming Languages: **Python**, JavaScript, **C/C++**, C#, HTML, Swift, **MATLAB**
Frameworks & Libraries: **TensorFlow**, **LangChain, OpenCV, YOLO, PyTorch**, React, Node.js, Django
Cloud & DevOps: **Amazon Web Service**, **Google Cloud Platform**, Firebase, Git, CI/CD
Development Tools: **Vertex AI**, Github, Xcode, Unity, Fusion 360, Blender, AutoCAD