

# 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

## WORK EXPERIENCE

### Vector Institute & University Health Network (WangLab)

Toronto, ON

*AI Research Engineer supervised by Prof. Bo Wang and advised by Dr. Jun Ma*

*May 2025 – Present*

- Train and deploy **multimodal foundation models** with **multitask learning** on large-scale **2D and 3D imaging datasets**, focusing on representation learning and transfer learning optimization.
- Engineered **vision-language alignment framework** for automated report generation from **gigapixel images**, implementing **multi-scale feature extraction pipeline** and **attention mechanisms** on **10,500+ multicenter cases**.
- Scaled **DINOv3 self-supervised learning** on **300M images** across **39 categories** via **distributed training on multi-H100 clusters**, achieving **SOTA representation learning** for downstream classification and segmentation tasks.
- Authored **educational framework paper** on vision-language model development (**finalist selection**), providing **end-to-end implementation cookbook** from architecture design to production deployment.
- Developed **data preprocessing pipelines** and **baseline models** for international ML challenges, designing and benchmarking experiments on **multi-GPU clusters**.

### 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 **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 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** across **multiple dimensions** 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 **Vertical category experts** and **ML researchers**

### VolunTrack Org.

Toronto, ON

*President/Founder*

*Jun 2022 - Sep 2024*

- Founded and scaled a **Non-Profit Organization** through a structured **Five-tier management system**, growing the company to **50+ members** and establishing partnerships with **100+ global non-profits**.
- Architected an **ML-powered volunteer matching system** using **TensorFlow** and **scikit-learn**, achieving **85% matching accuracy** and reducing manual matching time by **70%**.
- Developed a **full-stack volunteer platform** with **React Native** and **React.js**, integrating **MLOps practices** and employing **CI/CD pipeline** to ensure consistent and robust application builds, serving **500+ monthly active users**.
- Implemented **real-time analytics** using **Google Cloud Platform**, **Cloud Firestore**, and **TensorFlow.js**, deploying **ML models** for volunteer engagement prediction and churn analysis across **100+ organizations**.

## 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** 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**, **Node.js/Express**, and **PostgreSQL** with **JWT** and **Zod validation**.

## SKILLS

Programming Languages: **Python**, JavaScript, C/C++, C#, HTML, Swift, **MATLAB**  
Frameworks & Libraries: **TensorFlow**, **LangChain**, **OpenCV**, **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**