

Isaac Lo

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EDUCATION

Georgia Institute of Technology

M.S. in Computer Science

May 2026

GPA: 4.0/4.0

- Relevant Coursework: Artificial Intelligence, Machine Learning for Trading, Machine Learning

University of Illinois at Urbana-Champaign

B.S. in Mechanical Engineering, Minor in Computer Science

May 2024

- Relevant Coursework: Data Structures and Algorithms, Object Oriented Programming, Numerical Methods, Computational Photography, Data Science in Manufacturing Quality Control

EXPERIENCE

Graduate Research Assistant

Jan 2025 – Present

Design and Intelligence Laboratory

- Designed and developed a multi-modal document processing pipeline with **Python** to transform and store text, image, and structured data embeddings in **Weaviate**, enabling efficient retrieval for multi-modal **RAG** responses
- Improved document processing by integrating a Hugging Face layout analysis model via **Docker**, enabling automated key region detection and improving document segmentation accuracy
- Implemented an LLM-powered cleansing and summarization system for textual chunks, using **GPT** to extract key insights, enhance retrieval precision, and streamline data processing
- Created a GPT-4-powered image-to-text conversion service, improving document contextualization and increasing multi-modal retrieval accuracy by **35%**

Full Stack Software Engineer

Oct 2024 – Present

Aerospace Systems Design Lab @ GT - Energy Infrastructure and Data Engineering

- Developed a full-stack **Vue.js/Flask** web application that visualized real-time IoT sensor data from **20+** devices, through RESTful API integration
- Designed and deployed a secure sensor authentication service using **Python** and **MySQL**, enabling streamlined registration and management of IoT devices
- Built a data aggregation pipeline on **PostgreSQL**, visualizing raw WiFi logs as structured insights via custom database views, enabling users to retrieve and analyze devices across time intervals and locations

Software Engineer Intern

Dec 2024 – March 2025

Ace AI

- Built and integrated **Next.js** front-end views for a data labeling platform, connecting them to Go backend services via REST APIs
- Managed a **PostgreSQL** database hosted on Google Cloud SQL, optimizing queries and schema design for efficient data storage and retrieval
- Developed and deployed an interactive editor form on the contributor platform, enabling users to modify structured data directly within the interface, with real-time validation using **TypeScript**

PROJECTS

Machine Learning Engineer | Voight-Kampff Generative AI Authorship Classifier CLEF 2025

- Fine-tuned open-source generative (Mistral, Llama) and discriminative (Binoculars) AI models for text classification, distinguishing between human-written and LLM-generated text
- Developed an ensemble classifier, integrating multiple models to enhance robustness and improve classifier performance

RAG Engineer | PICO Scholar - 2nd Place @ Red Hat & Intel AI Hackathon github.com/datagero/pico-scholar

- Built RAG system using **LlamaIndex** for multi-document summarization, leveraged metadata filters to configure retrieval to match custom search criteria
- Implemented an end-to-end RAG-powered feature that generates context-aware chatbots for individual research papers, enabling direct queries on document details using LlamaIndex, **TiDB**, and **FastAPI**

SKILLS

Languages: Python, JavaScript, Java, C++, SQL, MATLAB

Tools/Technologies: PyTorch, sklearn, FastAPI, LlamaIndex, React, Vue.js, NumPy, pandas, PostgreSQL, Git, Docker