Katie Li

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Education

University of Illinois at Urbana-Champaign   Expected Graduation: May 2027

Bachelor of Science in Computer Science (GPA: 4.0/4.0)   *Champaign, IL*
- **Honors**: Dean's List 2025 | Rothmuller Award | Illinois Engineering Achievement Award
- **Relevant Coursework**: Algorithms and Models of Computation, Data Structures (C++), Computer Architecture, Probability & Statistics in CS (Python), Software Design Lab

Technical Skills

Languages: C++, Python, Java, JavaScript, TypeScript, SQL, C#
Frameworks/Technologies: React, Flask, TensorFlow, PyTorch, NumPy, HTML/CSS, PostgreSQL, XCode
Certifications: Machine Learning Specialization (DeepLearning.AI, Stanford)

Experience

PrairieLearn   Sep 2025 – Present

Software Developer   *Champaign, IL*
- Advancing the TheorieLearn initiative at the University of Illinois, supporting CS 173, CS 225, and CS 374.
- Developing PrairieLearn platform features in **Python** and **HTML/JS/TS**, impacting **14,000+ students annually**.

Forward Data Lab   Aug 2025 – Present

Research Assistant   *Champaign, IL*
- Working with Prof. Kevin Chang (UIUC) to build an **LLM-powered search engine** for research paper discovery and literature review, advancing beyond existing academic search platforms.
- Designing **prompt and retrieval** pipelines on **320k+ arXiv-scale NLP/CS papers** to extract structured insights.
- Delivering **weekly technical presentations** on system design, evaluation results, and improvement proposals.

Robotics For All   Jan 2022 – Jul 2022

Web Development Intern   *Cupertino, CA*
- Developed and shipped features for RFA's production website using **React, JavaScript, and CSS**, supporting nonprofit outreach to approximately **3000 users**.
- **Revamped the donations page** with **modern UI/UX** and embedded Google Forms, improving the donation flow.
- Optimized site performance by **improving rendering and CSS styling** for sharper visuals and efficiency.

MVHS Competitive Programming Club   Aug 2021 – Jun 2024

Director | USACO Gold Tier Competitor   *Cupertino, CA*
- Achieved USACO **Gold Division** status by solving advanced competitive programming problems in **C++**.
- Directed **80+ presentations** on competitive programming topics, growing club membership by **50%** over two years.

Projects & Research

LLM Instructional Video Understanding | *Python, GPT-4o, Whisper, V-Log*
- Designed a multi-modal AI pipeline to evaluate and rank STEM instructional videos for **WACV 2026**.
- Engineered **LLM prompts** and **batch processing scripts** to automate model evaluations, producing ranked scores.
- Scaled our system to handle **500+** long-form instructional videos (**400 hours of content**), enabling large-batch experimentation and achieving **80% commonality** with human evaluators.

Stride | *TypeScript, React Native, TensorFlow, PostgreSQL, XCode*
- Developed a mobile fitness app in **React Native + TypeScript**, building **Figma mockups** for UI design.
- Deployed on-device AI using **TensorFlow.js + MoveNet** to provide instant running form analysis.
- Structured a **PostgreSQL database** with integrated **login/signup authentication** and role-based access controls, ensuring secure management of user data.

Bookrates | *Flask, Python, NumPy, React, JavaScript, CSS*
- Engineered a book recommendation engine trained on a **dataset of 1M+ user interactions** and **72k novels**.
- Achieved **200% faster** collaborative filtering performance by implementing Parquet caching.
- Developed a **React frontend + Flask backend** to serve hybrid recommendation techniques, combining content filtering with a **collaborative filtering model**, and enabling large-scale recommendations across Goodreads users.