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 | Tau Beta Pi Engineering Honors Society
- **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

Forward Data Lab (UIUC)   Aug 2025 – Present
Research Assistant   *Champaign, IL*
- Working with Professor Kevin Chang to **integrate LLMs for literature review** and academic research, implementing early prototypes and giving weekly technical presentations.
- **Designing LLM prompts** to extract **structured insights** from research papers, improving literature review efficiency.

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 **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.

Competitive Programming Club   Aug 2021 – Jun 2024
Director (Monta Vista HS) | USACO Gold Tier Competitor   *Cupertino, CA*
- Achieved **USACO Gold Division status** by utilizing **C++** in competitive programming contests.
- Directed a **30+ member** programming club and **led 80+ presentations** on data structures, algorithms, and competitive programming topics, enhancing members' technical and problem-solving skills.

Projects & Research

LLM Instructional Video Understanding | *Python, GPT-4o, Whisper, V-Log*
- Developed a multi-modal AI pipeline that evaluates and ranks STEM instructional videos for **WACV 2026**.
- Wrote **batch processing scripts** to automate evaluation with **VLMs & LLMs**, generating ranked scores.
- Engineered **LLM prompts** to grade videos against a 12-item evaluation rubric (ex. content sequencing, clarity).
- Scaled our system to handle **500+** long-form instructional videos (**400+ hours of content**), enabling large-batch experimentation while achieving **80% commonality** with human evaluators.

Stride | *TypeScript, React Native, TensorFlow, PostgreSQL, XCode*
- Developed a mobile fitness app with **React Native + TypeScript**, building **Figma mockups** for UI design.
- Deployed on-device AI using **TensorFlow.js + MoveNet** to provide instant running form analysis.
- Optimized **PostgreSQL queries** and backend API calls, reducing data retrieval latency and improving real-time workout tracking for runners.
- Built a secure **login/signup authentication** system with role-based access, ensuring data privacy.

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.

Fashion Clothing Classifier | *CNN, Python/PyTorch, Fashion-MNIST*
- Built and trained a **convolutional neural network** (CNN) on the FashionMNIST dataset (70k images), achieving **94% accuracy** through multi-layer **Conv2D + ReLU + MaxPool** architecture and SGD optimization.