Katie Li

650-285-8450 katieli167@gmail.com linkedin.com/in/katieli167 katie-li.vercel.app

Education

University of Illinois Urbana-Champaign Expected Graduation: May 2027

*Bachelor of Science in Computer Science (**GPA: 4.00/4.00**)* *Champaign, IL*

- **Honors:** Dean's List 2025 | 2024/2025 Rothmuller Award | Tau Beta Pi Engineering Honors Society
- **Relevant Coursework:** Algorithms and Models of Computation, Data Structures (C++), Computer Architecture, Prob & Stats 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)

Projects

Stride | *TypeScript, React Native, TensorFlow, PostgreSQL, XCode*

- Developing a mobile fitness app with **React Native + TypeScript**, and building **Figma mockups** for UI design.
- Deploying on-device AI using **TensorFlow.js + MoveNet**, providing instant running form analysis.
- Optimizing **PostgreSQL queries** and backend API calls, reducing frontend data retrieval latency and improving real-time performance for runners tracking workouts.
- Developing 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 **datasets of 1M+ user interactions** and **72k novels**.
- Achieved **200% faster performance** on the collaborative filtering pipeline by implementing Parquet caching.
- Developed a **Flask backend API** to serve hybrid recommendation techniques, combining **content filtering algorithms** with a **collaborative filtering model**, and enabling large-scale recommendations across Goodreads users.

Shattered | *Unity, C#*

- Developed a 3D horror-themed escape room video game as part of UC Santa Cruz's COSMOS program.
- Optimized rendering pipeline through batching and post-processing tuning, **improving average FPS by 30%**.

Research

LLM Instructional Video Understanding | *Python, GPT-4o, Whisper, V-Log*

- Developed a multi-modal AI educational tool that evaluates and ranks STEM instructional videos.
- Wrote **batch processing scripts** in Python to automate evaluation with **VLMs & LLMs**, generating ranked scores.
- Streamlined team collaboration by packaging code and documentation into a **reproducible pipeline**.
- Scaled evaluation pipeline to handle **500+** long-form instructional videos (**400+ hours of content**), enabling large-batch experimentation while achieving **80% commonality** with human evaluators.

Experience & Leadership

TheCoderSchool Apr 2023 – Jun 2024

Python Coding Instructor *Cupertino, CA*

- Mentored middle and high school students in **50+ weekly Python lessons**, introducing core programming concepts.
- Guided students through game development projects, implementing interactive and playable experiences.

Robotics For All Jan 2022 – Jul 2022

Web Development Intern *Cupertino, CA*

- Collaborated with a team of interns to program *Robotics For All*'s main website using **React, JavaScript, and CSS**.
- Revamped the donation page with **modern designs** and embedded Google Forms for improved donation workflow.
- Reduced page load latency through render optimizations and improved **CSS styling** for sharper visuals.

USACO Competitive Programming Club Aug 2021 – Jun 2024

Director (Monta Vista HS) | Gold Tier Competitor *Cupertino, CA*

- Achieved **USACO Gold Division status** by utilizing **C++** in 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.