

# Kyle Ming Zhang

📍 San Jose, CA, 95148, USA 📞 +16692268281 ✉ kylemzhang@gmail.com

🌐 <https://www.linkedin.com/in/kyle-zhang-3a6551194/> 🐙 <https://github.com/kylez56789>

## Skills

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**Programming Languages:** Python, C/C++, Java, JavaScript, HTML, CSS, SQL

**Frameworks:** PyTorch, Tensorflow/Keras, OpenCV, React, Express.js, Next.js, Plasmio

**Tools:** AWS, Node.js, MySQL, Docker, Kubernetes, Git, Apache, MongoDB, Pinecone

## Experience

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**Research Lead, SCU Human-Computer Interaction Lab** Sep 2024 – Present

- Full-stack development for app scraping SMAR research web tool; tripled site load capacity and built RESTful APIs to enable easy-to-use search and querying functionalities
- Spearheaded model development for an adaptive UI browser extension aiming to predicting user intent for Youtube; experimented with RAG systems, prompt engineering, and fusion models
- Led team SCRUM ceremonies, sprint planning, and retrospectives to streamline task delegation and enhance team collaboration; resulted in improved productivity and project delivery

**Software Engineering Intern, Thales** Jan 2022 – Jun 2022

- Led a team of 4 engineer interns to investigate and integrate third-party services on test servers to enable a fluid microservice environment, enhancing overall interoperability infrastructure
- Utilized VirtualBox, Docker, Kubernetes, DAPR, and Bash scripting to execute technical solutions on four different types of platforms on test servers

**Student Researcher Fellowship, NSF** May 2021 – Sep 2021

- Collaborated closely with Siemens engineers and UCI researchers; leveraged sklearn and PyTorch library tools to implement data clustering and early stopping for two graph auto-encoder models
- Optimized and parallelized Python dataset generator to extract graphical representations from binaries, doubling speed of dataset generation

## Education

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**M.S. Computer Science and Engineering, Santa Clara University** 2023 – Mar 2025

Coursework: Advanced Algorithms Analysis, Deep Learning, Brain-Computer Interface, Data Visualization, Distributed Systems, Human-Computer Interaction, Blockchain Technologies

**B.S. Computer Engineering, University of California, Irvine** GPA: 3.83 2020 – Dec 2022

Coursework: Compilers, Computer Networking, Computer Architecture, Computer Vision, Databases, Operating Systems

## Projects

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**Systematic App Reviews, SCU HCI Lab**

- Engineered a highly responsive web application using React, driving significant increase in researcher engagement
- Designed a scalable backend and created RESTful APIs using Node.js and Express.js; enabled real-time retrieval of app metadata and rankings from Google Play and iOS App Store across multiple countries;
- Orchestrated the deployment of fullstack tool on AWS EC2 instances, ensuring high availability and optimal performance

**FocusMode, SCU HCI Lab**

- Built a RAG system with Pinecone, OpenAI GPT-4o mini, and nomic-embed-text; reached accuracies of 76% for pilot study
- Building a fusion model; combines categorical and numerical features encoded using a DeepFM and text embeddings to fuse textual, numerical, and categorical data

**Interoperable Microservices, Thales**

- Assessed multiple options for automated interoperability; coded bash scripts to install DAPR binaries onto multiple Thales servers in offline mode
- Developed a small microservice with Node.js and Python; demonstrated interoperable capabilities for three servers to Thales managers and engineers

**MINDSIGHT, UCI AICPS Lab**

- Implemented Early stopping and K-means clustering to PyTorch Geometric GAE/VGAE models; improved overall training convergence speed by 14% and accuracy by 3%
- Utilized Ghidra headless analyzer tool to decompile stripped binaries; extracted and combined control-flow and function-call graphs into a singular hierarchical graph representation for model training
- Wrote a data extractor in Python to fetch and create ACFGs for binaries from the ALLSTAR database; parallelized and halved dataset creation time