# Jiarun Lu

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## EDUCATION

**University of Southern California**  Los Angeles, CA
*M.S. in Computer Science,* GPA: 4.0/4.0  *Aug 2024 – May 2026*

**University of California, Santa Barbara**  Santa Barbara, CA
*B.S. in Actuarial Science,* GPA: 3.77/4.0  *Sep 2019 – Dec 2022*

- **Dean's Honor List**: Fall 2020, Winter 2021, Spring 2021

## SKILLS

**Programming Languages**: Python, C++, Java, JavaScript, Scala, Bash, Swift, HTML5, CSS3, SQL
**Frameworks and Libraries**: Node.js, Express.js, PyTorch, TensorFlow, OpenCV, MediaPipe, CUDA, React, Flask
**Tools and Technologies**: Git, Docker, Kubernetes, Jenkins, Firebase, Airflow, CAP, SwiftUI, REST APIs, GraphQL
**Databases and Cloud**: MySQL, PostgreSQL, SQLite, MongoDB, AWS, Google Cloud Platform, Microsoft Azure

## WORK EXPERIENCE

**Software Engineer Intern** | SAP | Shanghai, China  Oct 2023 – Apr 2024

- Engineered a robust back-end server utilizing the SAP Cloud Application Programming Model (CAP) for SAP's Digital School web application, establishing secure authentication protocols that maintained user data integrity during 10,000+ login attempts per week
- Constructed a scalable MySQL relational database managing over 50,000 application records while designing structured RESTful API responses that enhanced data exchange efficiency and reduced server response time by 30 milliseconds
- Executed thorough testing of RESTful API endpoints using Postman and cURL with over 100 unique test cases; identified critical performance bottlenecks that contributed to robust reliability across diverse input scenarios and edge conditions
- Created a web application leveraging AI technologies to automate newsletter generation for SAP, employing HTML, CSS, and Node.js; achieved a significant reduction in manual content creation time by over 40 hours monthly
- Led the development of a localized Retrieval-Augmented Generation tool using Langchain and the Llama2 model, building a company-specific knowledge system that improved customer-facing chatbot response accuracy by 70%

**Machine Learning Engineer Intern** | NewsBreak | Mountain View, CA  Jan 2023 – Jul 2023

- Leveraged the Airflow platform and Scala programming language for daily database maintenance, ensuring that the lifespan of the advertisement data stored in the database does not exceed the required ad retention time
- Generated Presto SQL tables within a Scala-based back-end system, automating the transformation of raw data into critical insights based on requests from the business team, reducing manual effort by 80%
- Formulated and refined complex query logic to aggregate and filter data using Presto SQL, boosting data processing efficiency and reducing data retrieval time by 70%
- Developed an interactive graphical template using Presto SQL, automating query processes to deliver real-time data insights; streamlined reporting for business departments and saved approximately 12 hours weekly on manual analysis tasks
- Optimized a supervised gradient boosting model by identifying and integrating 50 user attributes with positive correlation to ad revenue, reducing the Relative Squared Error (RSE) from 99% to 60% and thus enhancing the precision of revenue predictions

## RESEARCH PROJECT

**Research Assistant** | Augmented Intelligence Labs | Los Angeles, CA  May 2024 – Aug 2024

- Led a team of five in designing and developing an end-to-end hand gesture recognition pipeline, encompassing data collection, automated labeling, and real-time inference, utilizing PyTorch, Lab.js, Node.js, and SQLite3
- Architected a robust data collection logic within a Node.js back-end and SQLite3 database, enabling efficient labeling, storage, and processing of large-scale sequential training data, improving model training performance and reducing data preparation time by 40%
- Integrated MediaPipe, Quest 3, and Apple Watch as input sources into the pipeline, thereby enhancing flexibility in data acquisition of the pipeline