

# Frank Wang

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## EDUCATION

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### University of California Santa Barbara

*Bachelor of Science in Computer Science and in Statistics and Data Science*

GPA: 3.93/4.00

Awards: *Regent Scholar, Honors Program, Dean's Honors List*

Coursework: *Machine Learning, Computer Networks, Operating Systems, Computer Graphics, Computer Vision*

Santa Barbara, CA

Sep. 2022 – June 2026

## EXPERIENCE

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### TIP Intern

*Capital One*

June 2025 – Present

*Richmond, VA*

- Migrated a Spring Batch job from AWS EC2 to Fargate to eliminate wasted spending and improve scalability
- Analyzed a legacy codebase to extract only essential components for migration, minimizing technical debt
- Upgraded the test suite from JUnit 4 to JUnit 5 to enhance test reliability and remove deprecated methods
- Quickly learned and applied knowledge of Capital One internal tools to create and deploy complete batch job
- Participated in an Agile environment, including daily standup and sprint planning, to enable rapid delivery

### SWE Intern - Cloud Pipeline

*TDK Headway*

June 2024 – Sep. 2024

*Milpitas, CA*

- Built an automated cloud pipeline to divide around 20GB of data into staging files and upload to Microsoft Azure
- Developed a model drift detection algorithm that monitors weekly performance, ensuring 95%+ model accuracy
- Analyzed time-series data to identify anomalous trends using machine learning techniques with pandas and sklearn
- Used multi-threading in sql queries, optimizing memory usage by 20% and improving query efficiency
- Created moving range probability distributions to benchmark model predictions against historical data
- Implemented 4 statistical process control tests to improve early detection of anomalies
- Created 2 unit test classes for data engineering to ensure daily data upload and outlier predictions
- Refactored legacy code into modular components, enhancing pipeline flexibility and reducing technical debt

### Research Assistant

*UC Santa Barbara*

Jan. 2023 – Present

*Santa Barbara, CA*

- Launched MERN stack web app for surveys with pseudorandomization to ensure statistical validity of results
- Stored over 700 users' survey results in MongoDB and converted into csv format for efficient data analysis
- Collaborated with a teammate to conduct iterative testing and catch edge cases to ensure reliability
- Deployed a mock social media website with 200 users using AWS for compute and domain management

### Math Tutor

*UC Santa Barbara*

Sep. 2024 – Present

*Santa Barbara, CA*

- Prepared personalized lesson plans for 60 students on linear algebra, catering to various academic levels
- Communicated clearly difficult concepts, simplifying challenging technical topics into plain language
- Answered a wide variety of questions as a drop-in tutor, developing general problem solving skills and adaptability

## PROJECTS

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### SF Stopwatch | *React, Node.js, Flask, Python, R*

Feb. 2025

- Built a web app that displays an interactive, filterable heatmap of traffic stops in San Francisco from 2018 to 2023
- Used pandas to preprocess and serve data via a Flask API, ensuring smooth and efficient heatmap interactions
- Performed exploratory data analysis of over 260,000 traffic stops in R to find correlations and trends
- Optimized fetching of large data through preprocessing and efficient querying to decrease load times by 67%

### Nerd Search | *Python, Flask, React, PostgreSQL*

Dec. 2023 – Apr. 2024

- Built a full-stack web app with React, Flask REST API, and SQL database for streamlined tech job filtering
- Implemented machine learning support vector machine classification to classify job posts based on job descriptions
- Used tags to allow users to filter jobs based on location and job type to easily find relevant jobs
- Deployed web scrapers for 100 tech companies, maintaining an updated database of 300+ jobs

## TECHNICAL SKILLS

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

**Frameworks and Tools:** React, Node.js, Flask, MongoDB, Bootstrap, PostgreSQL, Git, Docker, AWS