Colm Lang

Software Engineering Intern

San Francisco, CA
Github, LinkedIn, Portfolio
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Education

University of San Francisco *Computer Science 4+1 (MS/BS)*

M.S. Computer Science, May 2025 | B.S. Computer Science, May 2024

Relevant Courses: Data Structures & Algorithms (MS), Big Data (MS), Principles of Software Development (MS), Senior Team Project, Systems Foundation (MS), Operating Systems, Computer Architecture

Skills

Languages Go, Java, C, JavaScript, Rust, Python
Frameworks Hadoop (MapReduce & HDFS), Spark, Serverless, Next.js, Node.js, D3, React, Tailwind
Tools Git, Vim, Bash, Zookeeper, Docker, Redis, MongoDB, PostgreSQL, MySQL

Work Experience

Software Development in Go Teaching Assistant | *University of San Francisco* May 2023 - Present

- Automating class grading by developing a centralized grading pipeline, harnessing Go's testing features through Github Action; increasing efficiency and saving countless hours for instructors
- Enhancing project and homework solutions by leveraging expertise in Go and MySQL, collaborating closely with the professor, streamlining and accelerating course development

Full Stack Software Engineer & Research Assistant | *University of San Francisco* May 2023 - July 2023

- Spearheaded the design and development of a full-stack web application in TypeScript, harnessing the power of Next.js, tRPC, and Vercel's serverless edge functions to prevent home displacement and empower individuals to secure housing stability in East Oakland
- Leveraged the robust Google Sheets API and Gmail service to log submissions and proactively provide invaluable resources to thousands of new users monthly

Data Visualization Research Assistant | *University of San Francisco* May 2022 - May 2023

- Implemented memory-efficient data structures and update techniques for a 230% increase in data-size capability, enhancing render speed and garbage collection time on mobile devices
- Created interactive software for a Data Visualization Literacy study on Node-Link Graphs and Treemaps, selected to present at the 2023 Eurographics conference for education-based papers

Projects

Spatiotemporal Climate Analysis *(Spark & Python)* Apr. 2023 - May 2023

- Extracted valuable insights into spatiotemporal climate patterns through in-depth analysis of terabytes of climate data using Apache Spark and Matplotlib for Data-Visualization
- Developed efficient Spark jobs to filter, aggregate, and process extensive climate data, optimizing parallel processing for enhanced performance and minimizing computation time

Distributed File System & Computation Engine *(Go)* Jan. 2023 - May 2023

- Created a Distributed File System and Computation Engine based on the research papers for GFS, HDFS, and MapReduce, strengthening practical knowledge of big data and distributed systems
- Developed fault tolerance mechanisms, load balancing, and datatype-aware chunk partitioning; resulting in optimized resource utilization, increased computation throughput, and data locality