Mark S. Kim

Data Science and Artificial Intelligence
Masters Student

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Projects, Research, & Fellowships

Jan 2022 to Present

AdvisingGPT: Foundation Models for Student Advising - San Francisco, CA
San Francisco State University, Department of Computer Science
Principal Investigator: Dr. Hui Yang

- Explore foundation models for course equivalency evaluation, and creation of personalized roadmaps to maximize student success rates.
- Investigate different methods including: prompt engineering; in-context learning; instruction fine-tuning; document-level embeddings search and ranking; and retrieval augmented generation.
- Iterative development informed through ongoing performance evaluation.

Phishing Emails: Clustering and Analysis - Leesburg, VA
Cofense Inc.
Research Supervisor: Chip McSweeney, Senior Research Engineer

- Investigation of clustering for early detection and categorization of phishing emails with an emphasis on computational speed and performance.
- Restructure and optimize Python C extensions that parse and analyze emails. Reduced memory usage by 95% and increased data utilization by 5%.
- Develop and validate thread-based and process-based parallelization (asynchronous). Reduced total processing time by 80%.
- Examine and analyze tradeoffs between dimensional reduction (PCA) and maintaining data precision.

Sept 2020 to Aug 2021

Frontiers of Data-Driven Computing REU - Houston, TX
University of Houston Department of Computer Science
Funding by the National Science Foundation
Principal Investigator: Dr. Ernst Leiss
Research Supervisor: Dr. Ionnis Pavlidis

- Develop and implement retrieval algorithms for affective research data (documents and authors) from Scopus, PubMed, and Web of Science.
- Exploratory clustering and co-occurrence analysis of retrieved data for a quantitative history of affective research.

COB Innovation and Entrepreneurship Fellowship - San Francisco, CA
San Francisco State University Lam Family College of Business
Faculty Director: Dr. Sybil Yang

- Cross-functional collaboration with co-founders to design and develop test preparation platform for disenfranchised students.

Nov 2019 to Jun 2020

Remote Instruction Pedagogy in Mathematics - San Francisco, CA
San Francisco State University Department of Mathematics
Research Supervisor: Dr. Shandy Hauk

- Academic literature review of research in pedagogical best practices for remote instruction.

Change-point Analysis Algorithm Development - San Francisco, CA
San Francisco State University Department of Mathematics
Research Supervisor: Dr. Alexandra Piryatinska

- Development of change-point analysis algorithm in Python from completed change-point analysis research.

Education

Data Science and Artificial Intelligence, M.S.
Anticipated Graduation: May 2025
San Francisco State University
GPA: 4.00

Computer Science, B.S.
Mathematics: Advanced Studies, B.A.
May 2023
San Francisco State University
GPA: 3.99

Honors & Awards

First Place Presentation
Frontiers in Data-Driven Computing REU
Aug 2021

Finalist
SFSU Innovation and Entrepreneurship
Pitch Competition
May 2021

Dean's List
San Francisco State University
2018, 2019, 2020, 2021, 2022, 2023

Organizations

ACM Student Chapter @ SFSU
Graduate Mentor, 2024-Present
Treasurer, 2023-2024
President, 2022-2023

SF Hacks
Treasurer, 2022-2024

CS Research Club
President/Founder, 2023-Present

Employment History

Graduate Researcher
San Francisco State University
Foundation Models for Student Advising
2023 to Present   San Francisco, CA

Program Lead/Graduate Researcher
San Francisco State University
Artificial Intelligence Scholarships that Improve
Academic Achievement, Retention, and Career
Success (AI-STAARS)
2023 to Present   San Francisco, CA

Program Liaison
Mathematics & Computer Science
San Francisco State University
Center for Science and Mathematics Education
2023 to 2024   San Francisco, CA

Facilitator
San Francisco State University
Center for Science and Mathematics Education
2021 to 2023   San Francisco, CA

Undergraduate Teaching Assistant
San Francisco State University
Department of Mathematics
2019 to 2021   San Francisco, CA