Mark S. Kim
Computer Science and Mathematics Undergraduate Student

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Research and Fellowships

Jan 2022 to Aug 2022

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.

Graphical Models for Brain Networks - San Francisco, CA
San Francisco State University Department of Mathematics
Research Supervisor: Dr. Serkan Hosten

- Study and exploration of *Graphical Models* by Steffen Lauritzen and "Fused graphical lasso for brain networks with symmetries" by Ranciati, Saverio et al.

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 matrix 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

- Workshops in numerical methods and statistics theory in preparation for research in change-point analysis and algorithm development.
- Study of completed change-point analysis research with the goal of adapting Matlab code to Python.

Education

Computer Science, B.S.
Mathematics: Advanced Studies, B.A.
Anticipated Graduation: May 2023
San Francisco State University
GPA: 4.00

Genetics, B.S. (Uncompleted)
University of California, Davis

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

Employment History

Undergraduate Teaching Assistant
Facilitator
San Francisco State University
Center for Science and Mathematics Education
2021 to Present   San Francisco, CA

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

Financial Center Manager, AVP
Bank of America
2017 to 2018   Belmont, CA

Founder/CEO
Kindred Enterprises Inc.
2005 to 2017   San Francisco, CA

Landing Support Specialist, Corporal
United States Marine Corps Reserve
1995 to 2001   San Jose, CA