Mark S. Kim

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Education

San Francisco State University — 2023 to Present
Data Science and Artificial Intelligence, M.S.
GPA: 4.00
Anticipated Graduation: May 2025

San Francisco State University — 2018 to 2023
Computer Science, B.S.
GPA: 4.00
Mathematics: Advanced Studies, B.A.
GPA: 3.98

Research Experience

Graduate Researcher — Aug 2023 to Present
San Francisco State University – San Francisco, CA
Principal Investigator: Dr. Hui Yang

AdvisingGPT: Foundation Models for Student Advising
An exploration of using proprietary and open-source foundation models to provide automated course equivalency evaluation and personalized program roadmaps to maximize student success rates. The techniques employed include: prompt engineering, in-context learning, and instruction fine-tuning of foundation and embedding models; document-level embeddings search and ranking; and retrieval augmented generation.

Graduate Researcher/Program Lead — Jan 2023 to Present
San Francisco State University – San Francisco, CA
Principal Investigator: Dr. Anagha Kulkarni

Artificial Intelligence Scholarships that Improve Academic Achievement, Retention, and Career Success (AI-STAARS)
An examination of methods to improve students' sense of belonging and identity with the field of Computer Science, and the effect it may have on students' retention and success. Qualitative research on metacognition through a comparative analysis of in-class assessed performance against students' perceived understanding. Data is collected through interviews, surveys, and observations of students during discussions.

Research Engineering Intern — Jun 2022 to Aug 2022
Cofense Inc. – Leesburg, VA
Research Supervisor: Chip McSweeney, Senior Research Engineer

Phishing Emails: Clustering and Analysis
An investigation of clustering for the early detection and categorization of phishing emails with an emphasis on computational speed and performance. Python C extensions that parse and analyze emails were restructured and optimized, which reduced memory usage by 95% and increased data utilization by 5%. Similarly, development and validation of thead-based and process-based asynchronous parallelization of the Python code base reduced processing time by 80%. Tradeoffs between dimensional reduction (PCA) and maintaining data precision were examined and analyzed.

NSF REU Scholar and Researcher — Jun 2021 to Aug 2021
University of Houston – Houston, TX
Funding by the National Science Foundation
Principal Investigator: Dr. Ernst Leiss
Research Supervisor: Dr. Ionnis Pavlidis

Frontiers of Data-Driven Computing REU
Developed and implemented multi-threaded retrieval algorithms for over 10 million records of affective research data (documents and authors) from Scopus, PubMed, and Web of Science. Performed exploratory clustering and co-occurrence matrix analysis of retrieved data to facilitate the investigation of a quantitative history of affective research.

Undergraduate Research Assistant Apr 2020 to Jun 2020
San Francisco State University – San Francisco, CA
Research Supervisor: Dr. Shandy Hauk

Remote Instruction Pedagogy in Mathematics
Provided an academic literature review of research in pedagogical best practices for remote instruction. This review was to inform new research in remote instruction in response to the COVID-19 pandemic.

Undergraduate Research Assistant Nov 2019 to Jan 2020
San Francisco State University – San Francisco, CA
Research Supervisor: Dr. Alexandra Piryatinska

Change-point Analysis Algorithm Development
Attended workshops in numerical methods and statistics theory in preparation for research in change-point analysis and algorithm development. Studied completed change-point analysis research and began work on adapting existing Matlab code to Python.

Teaching & Advising

Program Lead/Graduate Researcher Jan 2023 to Present
San Francisco State University - San Francisco, CA
Artificial Intelligence Scholarships that Improve Academic Achievement, Retention, and Career Success (AI-STAARS)
Develop and lead a three pronged support system to improve student success by reinforcing foundational knowledge, providing intensive advising, and engaging students with activities and exercises. This includes: a weekly intra-term lecture and workshop series; a weeklong programming foundations bootcamp to reduce learning loss; and a 10 week accelerated summer course in Machine Learning and Artificial Intelligence.

Mathematics Program Liaison Jan 2024 to May 2024
Computer Science Program Liaison Aug 2023 to Dec 2023
San Francisco State University - San Francisco, CA
Center for Science and Mathematics Education (CSME)
Lead a team of undergraduate facilitators that teach and support students taking supplementary courses in Mathematics and Computer Science.

Facilitator Jan 2021 to May 2023
San Francisco State University - San Francisco, CA
Center for Science and Mathematics Education (CSME)
Develop lesson plans and lead supplementary courses in Mathematics and Computer Science. These complementary courses deepen subject knowledge and improve student outcomes in their parent courses.

Undergraduate Teaching Assistant Aug 2019 to Dec 2020
San Francisco State University - San Francisco, CA
Department of Mathematics

Conferences

"Metacognition in Computer Science Learning: Perception vs. Reality," National Association of School Psychologists Annual Convention. Seattle, WA, USA. Accepted and forthcoming, February 2025.

"Foundation Models for Course Equivalency Evaluation," IEEE International Conference on Data Mining. Abu Dhabi, UAE. Accepted and forthcoming, December 2024.

Leadership

Association for Computing Machinery (ACM), SFSU Student Chapter Sept 2019 to Present
Graduate Mentor, May 2024 to Present
Treasurer, May 2023 to May 2024
President, Jan 2022 to May 2023

SF Hacks — May 2022 to Present
Graduate Mentor, May 2024 to Present
Treasurer, May 2022 to May 2024

CS{Research} Club — Aug 2023 to Present
President/Founder, Aug 2023 to Present

Artificial Intelligence Club — Aug 2023 to Present
Treasurer, Aug 2023 to Present

Korean Student Association — Aug 2024 to Present
President, Aug 2024 to Present

Professional Memberships

Society for Industrial and Applied Mathematics (SIAM)
Association for Computing Machinery (ACM)
National Association of School Psychologists (NASP)
Institute of Electrical and Electronics Engineers (IEEE)

Professional Experience

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

Founder/CEO — 2012 to 2017
Kindred Enterprises Incorporated - San Francisco, CA

References

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