

# Mark S. Kim

510.499.7953 ♦ mkim797@yahoo.com

## EDUCATION

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SAN FRANCISCO STATE UNIVERSITY  
*Data Science and Artificial Intelligence, M.S.*  
GPA: 4.00  
Anticipated Graduation: May 2025

2023 to Present

SAN FRANCISCO STATE UNIVERSITY  
*Computer Science, B.S.*  
GPA: 4.00  
*Mathematics: Advanced Studies, B.A.*  
GPA: 3.98

2018 to 2023

## RESEARCH EXPERIENCE

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### 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 thread-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. Ionniss 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

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**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-STAAARS)*

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

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“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

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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 <i>Graduate Mentor</i> , May 2024 to Present <i>Treasurer</i> , May 2022 to May 2024	May 2022 to Present
CS{RESEARCH} CLUB <i>President/Founder</i> , Aug 2023 to Present	Aug 2023 to Present
ARTIFICIAL INTELLIGENCE CLUB <i>Treasurer</i> , Aug 2023 to Present	Aug 2023 to Present
KOREAN STUDENT ASSOCIATION <i>President</i> , Aug 2024 to Present	Aug 2024 to Present

## PROFESSIONAL MEMBERSHIPS

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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

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<b>Financial Center Manager</b> , AVP BANK OF AMERICA - Belmont, CA	2017 to 2018
<b>Founder/CEO</b> KINDRED ENTERPRISES INCORPORATED - San Francisco, CA	2005 to 2017
<b>Landing Support Specialist</b> , Corporal UNITED STATES MARINE CORPS RESERVE - San Jose, CA	1995 to 2001

## REFERENCES

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**Hui Yang**  
*Associate Professor*  
 Department of Computer Science  
 SAN FRANCISCO STATE UNIVERSITY  
 415.338.2221, huiyang@sfsu.edu

**Arno Puder**  
*Professor and Department Chair*  
 Department of Computer Science  
 SAN FRANCISCO STATE UNIVERSITY  
 415.338.2853, arno@sfsu.edu

**Jessica Fielder**  
*Supplemental Instruction Program Director*  
 Center for Science and Mathematics Education  
 SAN FRANCISCO STATE UNIVERSITY  
 415.405.0540, jfielder@sfsu.edu

**Anagha Kulkarni**  
*Professor and Associate Department Chair*  
 Department of Computer Science  
 SAN FRANCISCO STATE UNIVERSITY  
 415.338.2539, ak@sfsu.edu

**Shasta Ihorn**  
*Associate Professor*  
 Department of Psychology  
 SAN FRANCISCO STATE UNIVERSITY  
 415.338.3218, sihorn@sfsu.edu

**Dragutin Petkovic**  
*Professor*  
 Department of Computer Science  
 SAN FRANCISCO STATE UNIVERSITY  
 415.338.2261, petkovic@sfsu.edu