

## 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 & INTERNSHIPS

### 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)*

Develop and lead a comprehensive support system to enhance student success through reinforcing foundational knowledge, intensive advising, and engaging activities. This initiative includes a weekly lecture and workshop series, a weeklong programming bootcamp to mitigate learning loss, and a 10-week accelerated summer course in Machine Learning and Artificial Intelligence. Additionally, research is being conducted to foster students' sense of belonging and identity in Computer Science and its impact on retention and success. Qualitative studies focus on metacognition through comparative analysis of in-class performance and students' perceived understanding, with data collected via interviews, surveys, and observations.

### 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. Optimizations to Python C extensions for parsing and analyzing emails reduced memory usage by 95% and improved data utilization by 5%. Additionally, thread-based and process-based asynchronous parallelization of the Python code reduced processing time by 80%. Trade-offs between dimensional reduction (PCA) and data precision were also analyzed.

### NSF REU Scholar and Researcher Jun 2021 to Aug 2021

UNIVERSITY OF HOUSTON DEPARTMENT OF COMPUTER SCIENCE – 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.

**Innovation and Entrepreneurship Fellow**

Sept 2020 to May 2021

SAN FRANCISCO STATE UNIVERSITY LAM FAMILY COLLEGE OF BUSINESS – San Francisco, CA

Faculty Director: Dr. Sybil Yang

*COB Innovation and Entrepreneurship Fellowship*

Collaborated with co-founders to design and develop a software-based test preparation platform for disenfranchised students.

**Undergraduate Research Assistant**

Apr 2020 to Jun 2020

SAN FRANCISCO STATE UNIVERSITY DEPARTMENT OF MATHEMATICS – 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 DEPARTMENT OF MATHEMATICS – San Francisco, CA

Research Supervisor: Dr. Alexandra Piryatinska

*Change-point Analysis Algorithm Development*

Attended workshops on numerical methods and statistical theory to prepare for research in change-point analysis and algorithm development. Reviewed existing change-point analysis study and began adapting Matlab code to Python

**CONFERENCES**

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Kim, M., Simon, H., Stipe, C., & Ihorn, S. (2025). Metacognition in Computer Science Learning: Perception vs. Reality. Poster to be presented at the annual meeting of the National Association of School Psychologists, Seattle, WA.

Simon, H., Kim, M., & Ihorn, S. (2025). The Impact of Early Exposure to Computing on Identity Development. Poster to be presented at the annual meeting of the National Association of School Psychologists, Seattle, WA.

Kim, M., Puder A., Hayward C., & Yang H. (2024). Foundation Models for Course Equivalency Evaluation. Paper presented at the IEEE International Conference on Data Mining: Workshop on Information Seeking with Big Models, Abu Dhabi, UAE.

Kim, M., Simon, H., Ihorn, S., & Kulkarni, A. (2024). Bridging the Experience Chasm in Computer Science: An Inter-term Bootcamp Approach. Poster presented at the San Francisco State University College of Science and Engineering Graduate Research and Creative Works Showcase, San Francisco, CA.

**HONORS & AWARDS**

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First place final presentation – Frontiers in Data-Driven Computing REU, University of Houston Aug 2021

Finalist – Entrepreneurship Symposium Innovation Pitch Competition, San Francisco State University May 2021

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

**LEADERSHIP**

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ASSOCIATION FOR COMPUTING MACHINERY (ACM), Student Chapter at SFSU 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  
*President, Aug 2024 to Present*

Aug 2024 to Present

## EMPLOYMENT HISTORY

### 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)*

### Graduate Researcher

Aug 2023 to Present

SAN FRANCISCO STATE UNIVERSITY - San Francisco, CA

*Research in Foundation Models for Student Advising*

### Mathematics Program Liaison

Jan 2024 to May 2024

### CS Program Liaison

Aug 2023 to Dec 2023

SAN FRANCISCO STATE UNIVERSITY - San Francisco, CA

*Center for Science and Mathematics Education (CSME)*

### Facilitator

Jan 2021 to May 2023

SAN FRANCISCO STATE UNIVERSITY - San Francisco, CA

*Center for Science and Mathematics Education (CSME)*

### Undergraduate Teaching Assistant

Aug 2019 to Dec 2020

SAN FRANCISCO STATE UNIVERSITY - San Francisco, CA

*Department of Mathematics*

### Financial Center Manager, AVP

2017 to 2018

BANK OF AMERICA - Belmont, CA

### Founder/CEO

2012 to 2017

KINDRED ENTERPRISES INCORPORATED - San Francisco, CA

## 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)

## SKILLS & COMPETENCIES

LANGUAGES: Python, Java, C/C++, JavaScript, HTML, CSS, R, Matlab

DATABASE SYSTEMS: SQL, MongoDB

WEB FRAMEWORKS/ENVIRONMENTS: Node.js, Express.js, React.js, Handlebars.js

LIBRARIES: PyTorch, Transformers, Sentence Transformers, Pandas, NumPy, Pydantic, scikit-learn, Matplotlib, Scrapy, BeautifulSoup, Plotly, Dash

DEPLOYMENT/CLOUD COMPUTING: AWS (EC2, S3, and Route53), Google Cloud (Compute Engine, Storage, Domains), Google Analytics, Oracle Cloud Infrastructure, NGINX

DEVELOPMENT PLATFORMS: Docker, Git, Jupyter, Conda

OTHER: L<sup>A</sup>T<sub>E</sub>X, Adobe Creative Suite (XD, Illustrator, InDesign, Photoshop)



Mark S. Kim