CAITLIN SIM

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EDUCATION

University of California, Berkeley, Berkeley, CA
B.A. in Cognitive Science, May 2023, GPA: 3.72 / 4.0
Relevant Coursework: The Structure and Interpretation of Computer Programs; Foundations of Data Science; Computational Models of Cognition; Discrete Mathematics; Rhythms of the Brain: From Neuronal Communication to Function; Introduction to Cognitive Science; Brain, Mind, and Behavior; Introduction to Human Physiology

EXPERIENCE

Lawrence Berkeley National Laboratory (LBNL), Berkeley, CA Aug 2022 – May 2023
Student Research Assistant

- Studied network utilization and performance for in-network caching systems in collaboration with the US Compact Muon Solenoid (CMS), a Large Hadron Collider (LHC) experiment.

Energy Sciences Network (ESnet), Berkeley, CA June 2022 – August 2022
DOE SULI Research Intern

- U.S. Dept. of Energy, the Science Undergraduate Laboratory Internships (SULI) program
- Studied network utilization to analyze the XCache measurement data in time-series and build LSTM machine-learning model to predict the data transfer performance.

Lawrence Berkeley National Laboratory, Berkeley, CA Aug 2021 – May 2022
Student Research Assistant

- Identified and analyzed datasets for data access pattern analysis and prediction for the dCache storage system.
- Developed methods and tools to predict data access patterns by mapping a file to a dataset.
- Calculated the dataset's popularity index to increase the efficiency of the data placement.

Texas A&M University, Commerce, TX
Research Assistant for Professor Jinoh Kim July 2018 – March 2019

- Analyzed network flow monitoring data for intrusion and anomaly detection and classification.

PUBLICATIONS & PRESENTATIONS

- **Caitlin Sim**, Kesheng Wu, Alex Sim, Inder Monga, Chin Guok, Frank Würthwein, Diego Davila, Harvey Newman, Justas Balcas, "*Effectiveness and predictability of in-network storage cache for Scientific Workflows*", IEEE International Conference on Computing, Networking and Communication (ICNC 2023), 2023, doi:10.1109/ICNC57223.2023.10074058.
- **Caitlin Sim**, Kesheng Wu, Alex Sim, Inder Monga, Chin Guok, Damian Hazen, Frank Würthwein, Diego Davila, Harvey Newman, Justas Balcas, "*Predicting Resource Utilization Trends of Southern California Petabyte Scale Cache*", 26th International Conference on Computing in High Energy & Nuclear Physics (CHEP 2023), 2023.
- Julian Bellavita, **Caitlin Sim**, Kesheng Wu, Alex Sim, Shinjae Yoo, Hiro Ito, Vincent Garonne, Eric Lancon, "*Understanding Data Access Patterns for dCache system*", 26th International Conference on Computing in High Energy & Nuclear Physics (CHEP 2023), 2023.
- **Caitlin Sim**, "*Data Throughput Performance Trends of Regional Scientific Data Cache*", ACM/IEEE The International Conference for High Performance Computing, Networking, Storage, and Analysis (SC'22), ACM Student Research Competition, 2022.
- Jinoh Kim, **Caitlin Sim**, Jinhwan Choi, "*Generating Labeled Flow Data from MAWILab Traces for Network Intrusion Detection*", ACM Workshop on Systems and Network Telemetry and Analytics (SNTA'19), 2019, doi:10.1145/3322798.3329251.

HONORS & ACTIVITIES

Honors: National Merit $2,500 Scholarship Winner; National AP Scholar; USA Computing Olympiad Silver Division
Activities: Cognitive Science Student Association, Speaker Committee (2021-2023); Cal Undergraduate Public Health Coalition, Community Health Committee (2020-2021); Marymount University Cybersecurity Residential Program (Sponsored by the NSA, 2018); Physics In & Through Cosmology Workshop at LBNL (2018)
Technical Skills: Python, Pandas, Numpy, TensorFlow, Matplotlib, Linux, MacOS, Windows
Languages: U.S. Citizen, English (Native), Spanish (Limited Working Proficiency), Korean (Elementary Proficiency)
Interests: Violin (First Violin at Oakland Youth Symphony Orchestra), reader for Librivox, cooking, hiking