Degree	College/University	Year
PhD Applied & Computational Mathematics	California Institute of Technology	2024 -
B.A Mathematics	San Francisco State University	2021-2023
B.S Computer science	San Francisco State University	2021-2024
A.5 Mathematics	Conege of the Redwoods	2010-2021
Rese	arch Experience	
PhD Student   Caltech		June 2024 - Current
$\circ~$ Randomized Linear Algebra, Tensor Networks, Efficient	nt low rank approximation, Tensor networks	
<ul> <li>I currently work as a first year graduate student papers related to randomized numerical linear al</li> </ul>	t Dr. Joel Tropp's research group. We ar gebra (rNLA).	e currently working on two
Researcher   San Francisco State University Research	h Fellow	February 2023 - May 2024
<ul> <li>Bayesian Deep learning, Gaussian Process theory</li> </ul>		
<ul> <li>Collaboration with Dr. Daniel Huang focusing Work explores Stein Variational Gradient Descent</li> </ul>	on concurrent programming techniques t, variational inference, and particle metho	for Bayesian deep learning. ods for neural networks.
<ul> <li>Publications: PusH: Concurrent Probabilistic Progra High-Dimensional Gaussian Process Regression</li> </ul>	amming with Function Spaces (arxiv 2023) with Soft Kernel Interpolation (arxiv 2024	)
Researcher   Caltech Summer Research Fellow		June 2023 - August 2023
<ul> <li>Randomized Linear Algebra, Tensor Networks, Hamil</li> </ul>	tonian Simulation	
$\circ~$ Collaboration with Ethan Epperly and Dr. Joel Tr	opp on novel algorithms for randomized	tensor network contraction.
Summer School Participant   Mathematical Sciences	s Research Institute (MSRI)	June 2023 - August 2023
$\circ~$ Dependent Type Theory, Formal Proof Verification		
<ul> <li>Invited to attend a graduate seminar on theorem malized a proof in functional analysis regarding t</li> </ul>	n proving in Lean4 representing San Fran the nonlinear Hahn Banach theorem now	ncisco State University. For- available in mathlib.
Researcher   Lawrence Berkeley National Laboratory	y (LBNL) REU	June 2022 - August 2022
• Randomized Linear Algebra, Tensor Networks, Hamil	tonian Simulation	
<ul> <li>Research under the guidance of Dr. Roel Van Be networks. Work is ongoing.</li> </ul>	eeumen on adapting the Sketched Raylei	gh Ritz Algorithm to tensor
Researcher   San Francisco State University / CAHS	I NSF Fellow Feb	ruary 2022 - December 2022
• Dimensionality Reduction, Manifold Theory		
<ul> <li>Research under the supervision of Dr. Daniel Hua Eigenmaps, and Parametric UMAP.</li> </ul>	ang on manifold learning algorithms such	as TSNE, UMAP, Laplacian
Scholar	stic Achievements	
• NSF Graduate Research Fellowship – <i>\$160,000</i>		2024
<ul> <li>Issued by: National Science Foundation</li> </ul>		
Caltech Kortschak Graduate Fellowship – \$95,000		2024
<ul> <li>Issued by: Caltech University</li> </ul>		
• CSU Pre-Doctoral Summer Research Grant – \$24.000		2023
• Issued by: California State University System		
<ul> <li>Latinos in Technology Scholar 2023-2024 – \$7 500</li> </ul>		2023
a Jacuad by: Silican Vallay Community Foundation		2020

<ul> <li>LSAMP Proud Award         <ul> <li>Issued by: National Science Foundation (NSF)</li> </ul> </li> </ul>	2023
BMC Scholarship in Computer Science	2023
<ul> <li>Issued by: San Francisco State University</li> </ul>	
Classes of the 1960's Endowed Scholarship	2023
<ul> <li>Issued by: San Francisco State University</li> </ul>	
Lilly M. Berry Scholarship	2023
<ul> <li>Issued by: San Francisco State University</li> </ul>	
Pamela Fong Scholarship in Mathematics	2023
<ul> <li>Issued by: San Francisco State University</li> </ul>	
SFSU Alumni Senior Scholarship	2023
<ul> <li>Issued by: San Francisco State University</li> </ul>	
Weinstien Family Scholarship	2023
<ul> <li>Issued by: San Francisco State University</li> </ul>	
<ul> <li>Google Explore CSR scholarship recipient \$3,500</li> <li>Issued by: Google</li> </ul>	2022
CSU Pre-Doctoral Sally Cassanova Scholarship	2022
<ul> <li>Issued by: California State University System</li> </ul>	
<ul> <li>Science Undergraduate Laboratory Internships (SULI) Scholar \$11,000</li> <li>Issued by: Lawrence Berkeley National Laboratory, United States Department of Energy</li> </ul>	2022
<ul> <li>SIAM Student Chapter Certificate of Recognition 2021-2022</li> <li>Issued by: SIAM</li> </ul>	2022
CAHSI REU Scholarship Recipient \$6,000	2022
<ul> <li>Issued by: National Science Foundation (NSF)</li> </ul>	
<ul> <li>Jack R and Marjorie J. Fraenkel Scholarship in Computer Science</li> <li>Issued by: San Francisco State University</li> </ul>	2022
Jules H. Strauss Scholarship in Computer Science	2022
<ul> <li>Issued by: San Francisco State University</li> </ul>	
Latinos in Technology Scholarship 2022-2023 \$7,500	2022
<ul> <li>Issued by: Silicon Valley Community Foundation</li> </ul>	
Conference Participation & Presentations	
Workshop Panelist   Sustainable Horizons Institute 2024	October 2024
<ul> <li>Participated as a panelist on a seminar on Graduate funding support, and Graduate school preparesented communities.</li> </ul>	ration for under rep-
Poster Presenter   Joint Math Meeting (JMM) 2024	January 2024
<ul> <li>Presented research research on randomized algorithms for efficient tensor network contraction Francisco, California</li> </ul>	this January in San
Data Analytics Challenge Winner   Great Minds in STEM Conference 2023	October 2023
<ul> <li>Recieved 1st place in a data analytics challenge during the Great Minds in STEM 2023 Conference nia.</li> </ul>	in Pasadena, Califor-

## Poster Presenter | Great Minds in STEM Conference 2023

• Presented research findings on UMAP and manifold embedding algorithms at the undergraduate research competition during the Great Minds in STEM Conference in Pasadena, California. Received Third place in the research poster competition

## Poster Presenter | 51st Annual Whiskeytown Lake Mathematics Conference

• Presented research findings on UMAP and manifold embedding algorithms and participated in a discussion on projective geometry.

## Research Presentation | Caltech

• Conducted a research presentation at Caltech during the summer of 2023, focusing on randomized tensor network algorithms.

### University Representative | SIAM Computational Science & Engineering Amsterdam 2023 **March 2023**

• Selected as the representative for the San Francisco State University chapter to attend the SIAM Conference on Computational Science & Engineering in Amsterdam.

## Poster Presenter | Joint Math Meeting (JMM) 2023

 Invited to present research conducted at Lawrence Berkeley National Laboratory during a poster session at the Joint Math Meeting 2023 in Boston.

## Award Recipient | California Forum for Diversity in Graduate Education

 Honored with the Sally Casanova Pre-Doctoral Scholarship and invited to attend the California Forum for Diversity in Graduate Education.

## • Poster Presenter | Lawrence Berkeley National Laboratory (LBNL)

 Presented research on tensor networks and eigensolvers at Lawrence Berkeley National Laboratory to staff and fellow undergraduate researchers.

### • Conference Panelist | SIAM Conference on Parallel Processing for Scientific Computing (PP22) February 2022

• Invited to serve as a panelist discussing diversity, equity, and inclusion in applied mathematics, representing the undergraduate community in the field.

## **Community Engagement**

## President, SIAM Chapter at San Francisco State University

• Over the past two years, I have led the SIAM Chapter at San Francisco State University, coordinating guest lectures from professionals in academia, industry, and national laboratories to enrich the educational experience of applied math students.

## Mathematics Tutor & Project Lead, San Francisco State University

• Since enrolling at San Francisco State University, I have provided tutoring services in a range of subjects, from introductory calculus to advanced linear algebra and analysis.

## • Embedded Mathematics Tutor & Project Lead

• Initiated involvement in an embedded tutoring program starting in Fall 2023, offering in-class academic support to early mathematics students at San Francisco State University.

# October 2023

## October 2023

August 2023

## August 2022

## February 2022 - May 2024

February 2022 - May 2024

# January 2023

## August 2023 - May 2024

## November 2022