



# Mikaela Meitz



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## EDUCATION

**California State University Long Beach**, Masters of Science

*Long Beach, CA*

*Graduated May 2023*

- Major: Applied Mathematics
- GPA: 3.6
- Thesis Project: Hamiltonian Neural Network Exploration for Electron Particle Tracking
  - Code and documentation found on GitHub

**California State University San Marcos**, Bachelor of Science

*San Marcos, CA*

*Graduated May 2020*

- Major: Mathematics

## WORK EXPERIENCE

**Lawrence Berkeley National Laboratory**-*Graduate Research Assistant*

*Berkeley, CA*

*August 2022-Present*

- Graduate research assistant for the National Energy Research Scientific Computing Center (NERSC)
- Studied Hamiltonian Neural Networks (HNN), used in Machine Learning for tracking particles within a particle accelerator, code in Python
- Reviewing and organizing large data sets
- Implementation of multiple machine learning models utilizing the supercomputers at NERSC
- Creating plots and methods to analyze results from the machine learning models

**California State University, Long Beach**- *Teaching Associate/Graduate Assistant*

*Long Beach, CA*

*August 2021- Jan 2023*

- Teach lower-division courses in mathematics under faculty supervision
- Courses: Calculus for Business and Power of Mathematics
- Communicate effectively with an ethnically and culturally diverse campus community
- Hold weekly office hours to support students
- Grade weekly homework assignments and exams

**California State University, San Marcos**- *STEM Center Tutor*

*San Marcos, CA*

*August 2018 – May 2020*

- Certification: CRLA Certified Tutor Level 3, 2020
- Helped students develop techniques to help improve their academic performance
- Classes tutored ALL level mathematics courses offered
- Monitored, assessed, and remediated student performance
- Identified, selected, and adapted resources to meet diverse student's needs

**General Atomics Aeronautical Systems Inc.**- *Configuration Management Engineering/UID*

*Poway, CA*

*June 2019-August 2019*

- Internship comprised of analyzing systematic data to build efficiency for the engineering department
- Assists in applying knowledge to analyze, investigate and resolve non-routine problems
- Responsible for observing all laws, regulations and other applicable obligations wherever and whenever business is conducted on behalf of the company
- Assists in developing electronic and hard copy reports, records, diagrams and charts through Microsoft, Power BI, and Alteryx

- Created a 30 page document that outlined how to comprise, organize, and present data

## TALKS

- **Thesis Project Defense:** Hamiltonian Neural Network Exploration for Electron Particle Tracking  
*May 2023*
- **California State University Mathematical Conference,** Woodland Hills, CA: Hamiltonian Neural Network Exploration for Electron Particle Tracking-*November 2022*
- **Colloquium at California State University San Marcos,** San Marcos, CA: Hamiltonian Neural Network Exploration for Electron Particle Tracking and careers in STEM with a mathematics degree- *October 2022*
- **Thesis Project Proposal:** Hamiltonian Neural Network Exploration for Electron Particle Tracking  
*September 2022*
- **NERSC Week Brown Bag Talk,** Berkeley, CA: Hamiltonian Neural Network Exploration for Electron Particle Tracking- *August 2022*

## POSTER SESSIONS

- CSULB College of Natural Science and Mathematics Research Symposium- *September 2022*
- Berkeley National Laboratory Summer Poster Session- *August 2022*

## FEATURED ARTICLES

- **NERSC News:**NERSC Summer Student Applies Machine Learning to Particle Accelerator Design Challenge  
<https://lnkd.in/gJaRXgbg>

## CERTIFICATIONS

- CRLA International Tutor Training Program: Level 3, lifetime certification

## SKILLS

*Computer Languages:* C++, Python, Matlab, Mathematica

*Software:* Jupyter, Linux, MS Office, MS Power BI, PyTorch

*Personal:* Team Leadership, Organization/Time Management, Mathematical Logic/Reasoning, Communication, Problem solving, Empathy, Algorithm creation