

# Anthony Meza

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## EDUCATION

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**Massachusetts Institute of Technology &  
Woods Hole Oceanographic Institution**  
Ph.D. in Physical Oceanography and Climate Science

Cambridge, MA

September 2021 – Present

**University of California, Irvine**  
B.S. in Mathematics, Concentration in Data Science

Irvine, CA

September 2018 – June 2021

## EXPERIENCE

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**Research Assistant**  
Woods Hole Oceanographic Institution, Gebbie Lab

Sep. 2021 – Present

Woods Hole, MA

- Ran several global ocean simulations using the MITgcm to diagnose the causes of deep ocean cooling in an global data assimilation effort by NASA
- Analyzed 15TB+ of next-generation high-resolution coupled climate model output to understand the connections between ocean circulation and dissolved compounds in the ocean
- Produced written reports, posters and presentations to communicate findings to broader communities

**Technical Consultant Intern**

Jan. 2025

Foundation for Resilient Societies

Cambridge, MA

- Received in-person training by Astrapé Consulting in Strategic Energy & Risk Valuation Mode (SERVM) software package.
- Ran and debugged simulation cases for generating capacity adequacy on the US electrical grid using SERVM
- Co-led a team of 12 Electric Grid Modeling Interns to create a comprehensive internal user guide for running SERVM experiments and analyzing their output.

**Research Assistant**

Sep. 2021 – Sep. 2023

Woods Hole Oceanographic Institution, Seo Lab

Woods Hole, MA

- Processed and analyzed 3TB+ of climate data and found significant connections between near-shore sea surface temperature and extreme California precipitation events
- Developed tools to analyze big climate data using Python and Julia

**Parallel Computing Summer Fellow**

Jun. 2021 – Aug. 2021

Los Alamos National Laboratory

Los Alamos, NM

- Implemented parallel reduced-precision capabilities within the ocean component of the Energy Exascale Earth System Model
- Found that reduced precision marginally reduced compute time (i.e. energy consumption), but at the cost of model skill

**Research Assistant**

Jun. 2020 – Sep. 2020

Institute for Pure and Applied Mathematics & The Aerospace Corporation

Los Angeles, CA

- Co-developed Q-learning and Deep Q-learning algorithms to improve satellite network communication efficiency
- Created Monte Carlo simulations to measure efficacy of algorithms using the PyTorch and NetworkX Python packages

## SIDE PROJECTS

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**xbuoy** | *Python, Xarray, multiprocessing, HTML, Pandas*

Sep. 2024 – Present

- Developed a system to query the National Data Buoy Center and aggregate data into daily, monthly and yearly NetCDFs
- Python package can already be downloaded from <https://github.com/anthony-meza/xbuoy>
- Future goals include using buoy, satellite and model data to improve coverage and projections of coastal regions

## TECHNICAL SKILLS

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**Languages:** Python, Julia, MATLAB

**Developer Tools:** Linux/Unix, Git, Github, VS Code, Google Colab