

EDUCATION	Massachusetts Institute of Technology & Woods Hole Oceanographic Institution Cambridge & Woods Hole, MA <i>Ph.D. in Physical Oceanography and Climate Science</i> University of California, Irvine <i>B.S. in Mathematics, Concentration in Data Science</i>	2021 - Present Irvine, CA 2018 - 2021
EXPERIENCE	Research Assistant, Woods Hole Oceanographic Institution <ul style="list-style-type: none">• Ran several global ocean simulations using the MITgcm to diagnose the causes of deep ocean cooling in a 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, Foundation for Resilient Societies <ul style="list-style-type: none">• 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, Woods Hole Oceanographic Institution <ul style="list-style-type: none">• 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, Los Alamos National Laboratory <ul style="list-style-type: none">• 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, Institute for Pure and Applied Mathematics <ul style="list-style-type: none">• 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.	2021.09 - Present Woods Hole, MA 2025.01 Cambridge, MA 2021.09 - 2023.09 Woods Hole, MA 2021.06 - 2021.08 Los Alamos, NM 2020.06 - 2020.09 Los Angeles, CA

PROJECTS

xbuoy | Python, Xarray, multiprocessing, HTML, Pandas

Personal Project

2024.09 - Present

- Developed a system to query the National Data Buoy Center and aggregate data into daily, monthly and yearly NetCDFs.
- Python package can 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

Languages: Python, Julia, MATLAB.

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