

Anthony Meza

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EDUCATION

Massachusetts Institute of Technology & Woods Hole Oceanographic Institution Cambridge, MA
Ph.D. in Physical Oceanography and Climate Science September 2021 – Present

University of California, Irvine Irvine, CA
B.S. in Mathematics, Concentration in Data Science September 2018 – June 2021

EXPERIENCE

Deep Ocean Dynamics Research Assistant Sep. 2021 – Present
Woods Hole Oceanographic Institution, Gebbie Lab Woods Hole, MA

- Ran several coarse resolution 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

Coastal Dynamics 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

Machine Learning 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
- Empirical models were built in Python primarily using PyTorch and NetworkX

SIDE PROJECTS

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

Languages: Python, Julia, MATLAB
Developer Tools: Linux/Unix, Git, Github, VS Code, Google Colab