

Zachary Espinosa

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EDUCATION

University of Washington , Seattle, WA PhD, Atmospheric Sciences Advanced Data Science Option	Expected Jun 2025
Stanford University , Stanford, CA M.S. Applied and Engineering Physics, Schools of Arts and Science	Jun 2021
Stanford University , Stanford, CA B.S. Computer Science, School of Engineering Concentration: Artificial Intelligence	Sep 2020

HONORS & FELLOWSHIPS

Department of Energy Computational Science Graduate Fellowship (DOE CSGF)	Apr 2022
Graduate Student Equity & Excellence Fellowship (GSEE Fellow)	Sep 2021
Achievement Rewards for College Scientists Foundation Scholar (ARCS Scholar)	Sep 2021
The GEM National Consortium Graduate Fellow (GEM Graduate Fellow)	Jan 2020

PROFESSIONAL EXPERIENCE

PhD Intern <i>Livermore, CA</i> Lawrence Livermore National Laboratory • Studied the impact of marine boundary layer clouds on historical East Pacific Ocean cooling	June 2023 – Sep 2023
PhD Intern <i>Richland, WA</i> Pacific Northwest National Laboratory • Studied the impact of climate change on annual precipitation in the Amazon Rainforest	June 2021 – Sep 2021
Graduate Research Assistant <i>Stanford, CA</i> Stanford Earth Systems Science • Developed a machine learning parameterization of gravity wave in a global climate model (Sheshadri Group) • Publication in Geophysical Research Letters - Espinosa, Zachary L., et al (2022)	Sep 2019 – Sep 2021
Machine Learning Engineering Intern <i>Redwood City, CA</i> UnifyID • Developed in-house machine learning pipeline for research & development. Introduced pipeline testing	Apr 2020 – Jun 2020
Quantum Engineering Intern <i>Palo Alto, CA</i> AT&T Foundry • Built an open-source python framework for quantum networking (QN) simulations called netQuil , designed to support the implementation of canonical QN protocol (e.g. teleportation, superdense coding)	Jun 2019 – Sep 2019
Software Engineering Intern <i>Mountain View, CA</i> Smartcar, Inc. • Designed, built, and launched electric vehicle endpoints for Smartcar API • Maintained python, node.js, and java SDKs. Contributed to OAuth2 pipeline.	Jan 2019 – Jun 2019
Mobile Software Engineering Intern <i>San Francisco, CA</i> OXO, Inc. • Built first iteration MVP mobile app for iOS and Android using React Native, Firebase, Heroku, and AWS RDS.	Apr 2018 – Sep 2018
Web and Networking Engineering Intern <i>Ashton, ID</i> Henry's Fork Foundation • Designed and built a data collection network for monitoring the Yellowstone watershed.	Jun 2017 – Sep 2017

TEACHING & MENTORSHIP

Graduate President of UW American Meteorological Society Chapter <i>Seattle, WA</i>	Sep 2021 – Sep 2023
Weather 101 Teaching Assistant <i>Seattle, WA</i>	Jan 2023 – Mar 2023

PRESENTATIONS

Talk Scientific Committee on Antarctic Research The Physics of Summertime Antarctic Heatwaves	June 2023
Poster BEPSII Arctic Field School Drivers of Interannual Variability of Summer Sea Ice Extent	May 2022
Speaker AGU Fall Meeting Machine Learning Emulation of Parameterized Gravity Wave Momentum	Dec 2021
Speaker EGU General Assembly Machine Learning Emulation of Parameterized Gravity Wave Momentum	Apr 2021
Speaker CalGFD A Data-Drive, Single column Gravity Wave Parameterization in an Idealized Model	Aug 2020
Poster Stanford Deep Learning Poster Session Distracted Driver Detection	Jun 2018
Poster Stanford Artificial Intelligence Post Session Tracking Schistosomiasis with Computer Vision	Mar 2018

ADDITIONAL INFORMATION

Tooling: Python, Tensorflow, Dask, Fortran, C, C++, Julia, Node.js, Express, Javascript, React Native, AWS, Postgres, SQL
Expertise: Climate modeling, Extreme Weather, Data Analytics, Deep Learning, Reinforcement Learning, Computer Vision