Garrett Limon, Ph.D.
Los Angeles, CA | (818) 642-6528 | glimon@umich.edu | linkedin.com/in/garrett-limon

SUMMARY

Machine Learning Scientist with a PhD and seven years of experience building and evaluating deep learning and statistical models in Python. Developed and published novel ML frameworks for large-scale scientific simulation, working with flagship climate models and AI-driven weather forecasting systems. Seeking Data Scientist and Applied Scientist roles where rigorous scientific thinking drives real-world impact.

EDUCATION

Ph.D. - Climate and Space Sciences and Engineering; University of Michigan - Ann Arbor 2025
Dissertation title: *The Intersection of AI and Climate Modeling: Emulators for Physical Parameterizations and Frameworks for Testing AI Weather Models*
Graduate Certificate - Data Science; University of Michigan - Ann Arbor 2025
Graduate Certificate - Science & Technology Public Policy; University of Michigan - Ann Arbor 2025
M.S. - Physics; California State University - Northridge 2018
B.S. - Physics; California State University - Northridge 2016

EMPLOYMENT

Graduate Student Research Associate, University of Michigan - Ann Arbor 2018-2025
Conducted independent research at the intersection of AI and atmospheric science using national HPC infrastructure. Selected Projects:
Developmental Framework for Dynamical Tests of AI-Driven Weather Forecasting

- Designed and implemented a testing framework to evaluate model behavior and learned dynamics of the GraphCast weather forecasting system at varying vertical resolutions
- Identified systematic differences in model behavior at higher resolutions, providing novel insight into what AI forecasting systems learn and where they can or cannot be trusted
- Built evaluation infrastructure for AI-driven weather forecasting systems, directly addressing an emerging gap in model interpretability and operational trustworthiness

Machine Learning Emulators in Idealized Climate Models

- Trained and evaluated Random Forest emulators for foundational physical processes, publishing findings on skill degradation scaling with model complexity (*JAMES*, 2023)
- Identified critical deployment barriers at the Python-Fortran interface including memory management and unconstrained neural network stability, informing practical boundaries of ML-climate model coupling
- Executed full ML development lifecycle; from problem formulation and dataset design through model training, evaluation, and live coupling to a flagship climate model

Graduate Research Assistant, California State University - Northridge 2016-2018
Conducted research developing and implementing a recursive multi-grid solver to optimize computational efficiency of biomolecular solvation calculations within the 3D-RISM framework

Graduate Student Instructor, California State University - Northridge 2016-2017
Taught introductory Astronomy and E&M lab courses, developing lesson plans, quizzes, and lectures while guiding students through theory and experiments

PROGRAMMING SKILLS

Languages: Python, Fortran, MATLAB; *ML/DL*: PyTorch, TensorFlow, scikit-learn, Xarray; *Other*: MPI, PBS, Bash, LaTeX, Git

AWARDS AND ACHIEVEMENTS

- Graduate Research Fellowship Program (GRFP), National Science Foundation.
- Funded Attendee, AMS Summer Policy Colloquium, National Science Foundation.
- Inductee, Sigma Pi Sigma National Physics Honor Society, CSU, Northridge Chapter
- D. E. Bianchi Outstanding Graduate Student Award, CSU, Northridge College of Science & Mathematics.

LEADERSHIP AND MENTORSHIP

President, Graduate and Undergraduate Student Organization (2020-2021). Department of Climate and Space Science at the University of Michigan.
Reviewer and Panelist, NSF & External FundingWorkshops (2019-2021). University of Michigan.