Shane Stevenson

ShaneStevenson04@gmail.com | shstevenson@ucsd.edu | 442-224-8343 | San Diego, CA
linkedin.com/in/shane-stevenson-ss | Shane-Stevenson.github.io | github.com/Shane-Stevenson

RELEVANT WORK EXPERIENCE

SDSU Climate Informatics Lab **January 2023 - June 2026**
Student Researcher San Diego, CA

- Built a GPU-accelerated reproduction and evaluation harness for FourCastNet and FourCastNetv2
- Conducted a comparative study of FourCastNetv2 vs operational NWP baselines (GFS, IFS), quantifying forecast skill
- Contributed to a cloud-based, standardized run framework for FourCSastNetv2 on AWS
- Led hands-on tutorials with PhD students at UIW and CCNY, supporting onboarding and adoption of FourCastNetv2

SDSU Machine Vision and Perception Lab **August 2023 - June 2026**
Research Assistant San Diego, CA

- Built a ROS 2–integrated MuJoCo simulation environment for a robotic cooking arm, enabling rapid prototyping and testing
- Contributed to a reinforcement learning training pipeline for policy learning in simulation, supporting data collection and training
- Supported hardware bring-up and lab setup for the cooking arm, assisting with system integration, calibration, and troubleshooting
- Won a $3,000 grant for our team after completion of the National Science Foundation's I-Corps program
- Took the initiative to onboard new members as development scaled

Collins Aerospace **January 2025 - August 2025**
Air Combat Test and Training - Datalink, Co-op Cedar Rapids, IA

- Contributed to a C++-based real-time, distributed communications system used in mission-critical aviation applications
- Spearheaded the design and development of a cost-effective alternative to the main communications application
- Developed across multiple abstraction layers, including low-level radio firmware interfaces up to application logic
- Designed and implemented extensive functional tests to ensure system reliability, using hardware-in-the-loop (HIL) setups
- Utilized CI/CD tools such as Bamboo and Grafana to support deployment monitoring and system performance analysis
- Worked within an Agile SCRUM development team to complete sprint-based deliverables and perform sprint planning
- Security Clearance: Secret, inactive

ChangeAerial **September 2024 - April 2025**
Machine Learning Engineer San Diego, CA

- Refactored and extended a legacy defect detection RNN pipeline, improving code quality, functionality, and maintainability
- Diagnosed model convergence issues and assessed data-generation bottlenecks that hindered RNN accuracy
- Fine-tuned Stable Diffusion XL to generate synthetic defect imagery, significantly enhancing training dataset diversity
- Developed image registration tools using OpenCV and Scikit-Image to align and preprocess aerial imagery for training data
- Worked across the entire ML stack, from data preprocessing and synthetic generation to model training and evaluation

Naval Research Enterprise Internship Program **June 2024 - August 2024**
Atmospheric Propagation Intern San Diego, CA

- Independently designed a scalable error characterization pipeline to assess the accuracy of aggregated weather sensors
- Collaborated with team members to validate my error characterization pipeline, ensuring its accuracy and reliability
- Interfaced with Docker to create a continuous integration/continuous deployment (CI/CD) pipeline on GitHub
- Wrote robust tests for the error characterization pipeline codebase and interfaced them with the CI/CD pipeline
- Assisted a teammate in deploying their product online as a standalone website, ensuring accessibility and functionality

EDUCATION

University of California, San Diego **September 2026 - Present**
Ph.D. Mechanical and Aerospace Engineering San Diego, CA
Advisor: Boris Kramer

San Diego State University **August 2022 - May 2026**
B.S. Computer Science and Computational Mathematics double major - GPA: 3.98 San Diego, CA

Publications

- Stevenson, S., J. Perez Cuarenta, M. Parker, S. Lilledahl, S. S. P. Shen, 2025: Estimation of Spatial Sampling Errors from Non-Independent Meteorological Sensors. *Theoretical and Applied Climatology*, submitted.
- Lizerbram, A., S. Stevenson, I. Khadir, M. Tu, S. S. P. Shen, 2025: Robustness test for AI forecasting of Hurricane Florence using FourCastNetv2 and random perturbations of the initial condition. *Artificial Intelligence for Earth Sciences*, accepted.
- Khadir, I., S. Stevenson, H. Li, K. Krick, A. Burrows, D. Hall, S. Posey, S. S. P. Shen, 2025: Democracy of AI Numerical Weather Models: An Example of Global Forecasting with FourCastNetv2 Made by a University Research Lab Using GPU. arXiv: 2504.17028. *Artificial Intelligence for the Earth Systems*, submitted.