Diego Llanes

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ABOUT ME

I am a machine learning researcher specialized in deep reinforcement learning, computer vision, deep learning, and dynamical systems; I am passionate about advancing the field of control through data.

EXPERIENCE

Scientific Machine Learning Masters Intern *Remote, Richland, WA, USA*
Pacific Northwest National Laboratory *Jul 2023 - Present*
- Added features to an open-source project to attract new users from other domains to our project.
- Developed a strong foundation in control theory, deep reinforcement learning and Generative-AI.

Deep Learning Research Assistant *Bellingham, WA, USA*
Hutchinson Machine Learning Research Group *Sep 2022 - Present*
- Engaged in weekly reviews of state-of-the-art research for deep learning approaches and techniques.
- Developed open-source software to increase accessibility of high-throughput compute to new users.

Graduate Course Teaching Assistant *Bellingham, WA, USA*
Western Washington University *Mar 2023 - Present*
- Developed visualization tools and worksheets to teach complex machine learning concepts effectively.
- Delivered lectures on advanced topics, bridging theoretical knowledge with practical applications.

TECHNICAL SKILLS

Programming Languages: Python, JavaScript, R, Go, Java, C, C++, HTML, CSS, SQL
Libraries and Frameworks: PyTorch, NumPy, TensorFlow, Gymnasium, Flask, ROS

PUBLICATIONS

Global Change Analysis Model Emulation Winter 2025
Developed an emulator for the Global Change Analysis Model and created novel sampling strategies for training an emulator on a minimal set of training data while maximizing generalizability.
This work is to be submitted by early Fall 2025 for ICLR 2025.

STARS: Sensor-agnostic Transformer Architecture for Remote Sensing Summer 2024
Created a hyperspectral foundation model for generating low-dimensional latent representations of light information, enabling efficient downstream prediction tasks in computer vision.
This work was presented at IEEE Whispers 2024 conference.

Tractable, Reliable, and Operational Neural Networks for Buildings Energy Management. Winter 2024
Benchmarked the use of Differentiable Predictive Control against traditional deep reinforcement learning algorithms for the control of non-linear dynamical systems and building systems.
The manuscript for this work is in progress and is to be submitted to a control conference early Winter 2025.

BOSS Net: A Self-consistent Data-driven Model for Determining Stellar Parameters Fall 2023
Developed a pipeline for the estimation of surface gravity, surface temperature, and iron content from photometric light readings focused in the near-infrared.
This work was presented at the 2023 SDSS-V Collaboration Meeting and published in the Astronomical Journal.

EDUCATION

Western Washington University, Bellingham, WA, USA *Sep 2024 - Jun 2025 (Expected)*
Master of Science in Computer Science 4.0 GPA

Western Washington University, Bellingham, WA, USA *Jan 2021 - Jun 2024*
Bachelor of Science in Computer Science 3.6 GPA