Diego Llanes

Bellingham, WA, USA

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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 <u>open-source project</u> 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 <u>open-source software</u> 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 designed a methodology using deep reinforcement learning to suggest training points that increase model generalization during online training.
This work is to be submitted in early Winter 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 <u>IEEE Whispers 2024 conference</u>.

TRONN BEM: 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.
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 <u>Astronomical Journal</u>.

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