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 2022 - Present*

- Added features to an open-source project to attract new users from other domains to our project.
- Collaborated with domain experts to model building energy dynamics and optimize control policies.
- 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*

- Developed an autoregressive diffusion method for predicting spatio-temporal trends of climate data.
- 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

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.

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 planned 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 Flatiron Institute during the 2023 SDSS-V Collaboration Meeting and subsequently 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