

Alex Ayala

RESEARCH ENGINEER

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Key Skills

- Deep Learning Research Experience
- Strong Background in Mathematics
- High-Performance Computing Research Experience
- Extensive Experience in Python

Experience

Deep Learning Research Assistant

WESTERN WASHINGTON UNIVERSITY – ADVISOR: DR. BRIAN HUTCHINSON

Bellingham, WA

Jan 2020 - Current

- Lead student on climate generation project – Training conditional Generative Adversarial Networks on climate data.
- Applying object detection to aerial LiDAR data to identify archaeological objects in the Mayapan archaeological zone.
- Launch and monitor experiments through Weights & Biases.
- Discuss results with domain experts in weekly meetings.
- Attend weekly reading group – discuss key papers in Deep Learning literature.

Master's Research Intern (National Security Internship)

PACIFIC NORTHWEST LABORATORY

Seattle, WA

June 2020 - Sep 2020

- Applied transformers to the few-shot learning domain.
- Presented my research progress in bi-weekly meetings.
- Implemented distributed computing in the existing codebase to improve training times.

Visiting Student Research Assistant

LAWRENCE BERKELEY NATIONAL LABORATORY

Berkeley, CA

June 2019 - Aug 2019

- Worked in a small team to perform program performance analysis & comparison across several HPC applications.
- Created a Python pipeline to process, analyze, and visualize performance data.

High Performance Computing Research Assistant

WESTERN WASHINGTON UNIVERSITY

Bellingham, WA

Sep 2018 - Sep 2019

- Performed feature-importance analysis on performance data collected on LLNL's Catalyst Cluster.
- Developed a distributed web scraper to generate a dataset of over 4 millions entries, utilized for performance research.

Skills

Languages Python, Java, JavaScript, Octave, C++, C

Libraries NumPy, PyTorch, Pandas, Scikit-Learn, SciPy, BeautifulSoup, Selenium, Plotly, Matplotlib, D3

Programming Data Scraping, Data Mining, Data Processing, Deep Learning, High-Performance Computing, Data Visualization

Mathematics Numerical Computation, Linear & Non-Linear Optimizations, Number & Set Theory, Mathematical Proofs

Education

Master of Science, Computer Science

WESTERN WASHINGTON UNIVERSITY

Bellingham, WA

Jan 2020 - Dec 2021

GPA — 3.92

Bachelor of Science, Math/Computer Science

WESTERN WASHINGTON UNIVERSITY

Bellingham, WA

Sep 2015 - Dec 2019

Publications

Loosely Conditioned Emulation of Global Climate Models With Generative Adversarial Networks

TACKLING CLIMATE CHANGE WITH MACHINE LEARNING WORKSHOP – NEURIPS 2020

2020

Authors: Alexis Ayala, Christopher Drazic, Brian Hutchinson, Ben Kravitz, Claudia Tebaldi

Performance Optimality or Reproducibility: That is the Question

INTERNATIONAL CONFERENCE FOR HIGH PERFORMANCE COMPUTING, NETWORKING, STORAGE AND ANALYSIS

2019

Authors: Tapasya Patki, J. J. Thiagarajan, Alexis Ayala, T. Z. Islam

Towards A Programmable Analysis and Visualization Framework for Interactive Performance Analytics

SUPER COMPUTING WORKSHOP – PROTOOLS

2019

Authors: Tanzima Z. Islam, Alexis Ayala, Quentin Jensen, Khaled Ibrahim