

Alex Ayala

RESEARCH ENGINEER

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Key Skills

- Deep Learning Research Experience
- Skilled In Creating Training & Inference Pipelines
- High-Performance Computing Research Experience
- Extensive Experience In Python

Experience

Data Scientist

Redmond, WA

MICROSOFT – ENTITY UNDERSTANDING TEAM

Jan 2022 - Current

- Training transformer-based NLP models on text-classification, knowledge distillation, named entity recognition, and seq2seq generation tasks.
- Led collaborative programming sessions and weekly open discussions, fostering teamwork and knowledge exchange.
- Maintain multiple diverse deep learning pipelines for training, real-time inference, and offline inference tasks using Azure and Docker.
- Conduct regular experiments using new datasets, architectures, and research ideas to enhance deep learning model performance.
- Convert PyTorch models to ONNX format while performing rigorous testing to guarantee consistent model output.

Deep Learning Research Assistant

Bellingham, WA

WESTERN WASHINGTON UNIVERSITY – ADVISOR: DR. BRIAN HUTCHINSON

Jan 2020 - Dec 2022

- Lead climate generation project – Training conditional Generative Adversarial Networks on temporal geospatial climate data.
- Applied object detection to aerial geospatial LiDAR data to identify archaeological objects in the Mayapan archaeological zone.
- Participated in regular discussions with domain experts and incorporating their insights to shape data processing and task definition.
- Engaged in collaborative deep learning reading groups, fostering an inclusive learning environment.

Master's Research Intern (National Security Internship)

Seattle, WA

PACIFIC NORTHWEST LABORATORY

June 2020 - Sep 2020

- Performed research on the application of transformers in the few-shot learning domain.
- Conducted comprehensive literature review and presented in-depth findings to aid in further research direction.
- Presented research progress in bi-weekly meetings, prioritizing important details for concise and effective discussions.
- Implemented multi-GPU support in an existing codebase, resulting in significant improvements in training speed.

High Performance Computing Research Assistant

Bellingham, WA

WESTERN WASHINGTON UNIVERSITY, LAWRENCE BERKELEY NATIONAL LABORATORY

Sep 2018 - Sep 2019

- Worked in a small team to perform program performance analysis & comparison across several HPC applications.
- Developed a distributed web scraper to generate a dataset of over 4 millions entries, utilized for performance research.
- Performed feature-importance analysis on performance data collected on LLNL's Catalyst Cluster.

Skills

Libraries PyTorch, NumPy, Onnxruntime, DeepSpeed, Pandas, Scikit-Learn, SciPy, Beautiful Soup, Selenium, Plotly, Matplotlib, D3
Programming Deep Learning, High-Performance Computing, Azure, Docker, Data Processing, Data Scraping, Data Visualization

Education

Master of Science, Computer Science

Bellingham, WA

WESTERN WASHINGTON UNIVERSITY

Jan 2020 - Dec 2021

GPA — 3.92

Bachelor of Science, Math/Computer Science

Bellingham, WA

WESTERN WASHINGTON UNIVERSITY

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