

Serena Alvarez

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EDUCATION

- Master's of Data Science**, University of California, Irvine Sep 2023 – Dec 2024
Focus on Machine Learning and Artificial Intelligence
- B.A. Quantitative Economics**, University of California, Irvine Jun 2022
Specialization in International Issues and Economics
Minors in Mathematics and Statistics

PROFESSIONAL EXPERIENCE

Electronic Warfare Associates (EWA)

- Graduate R&D Intern, Machine Learning / Artificial Intelligence Jan 2024 – Present | Herndon, VA
- Developed a custom GPU Cloud Training tool to assist the team in speedily training machine learning models in a cost-efficient manner
 - Provided mentorship and training to two summer undergraduate interns for their adjacent machine learning project
 - Assisted in the development of the web page interfaces to host the GPU Cloud Tool and 'Tantum' project using Angular
- R&D Intern, Machine Learning / Artificial Intelligence Jun 2022 – Jan 2024 | Herndon, VA
- Implemented data processing pipelines to facilitate efficient analysis and interpretation of complex datasets
 - Developed machine learning models with custom loss functions to create unique profiles of IQ data using dimension reduction techniques
 - Created time series-based anomaly detection algorithms for predictive analysis of JTAG data
 - Collaborated on the integration of a Docker-based unified dev environment for a multidisciplinary team
 - Established framework for large-scale data transformation and computation in the cloud, utilizing Python, Spark, and GCP

SKILLS

Python, R, SQL (MySQL)

The languages of choice for everyday analysis, model building, and engineering.

ETL Pipeline Construction, Apache Spark, GCP (Google Cloud Platform)

To build data pipelines that ensure the efficient flow of data through its lifecycle.

Data Visualization, MATLAB

Translating the complexities of the data into visual storytelling.

Machine Learning, TensorFlow, Pytorch

Frameworks used for the engineering of machine learning models.

Docker, Git/Github

For the construction of standalone containerized apps and tools.

Time Series Analysis, Econometric Analysis

For approaching a problem from the top-down perspective to gain an understanding of a phenomenon.

PROJECTS

- Time Series Outlier Detection** Sep 2022 – Dec 2022
- Applied time series techniques to detect and analyze outliers in JTAG data cast as time series.
 - Developed algorithms using R to identify when and where errors occur in the time series data.
- Boundary Scan Exploratory Analysis** Jun 2022 – Sep 2022
- Conducted exploratory data analysis of JTAG data in R to detect and visualize error anomalies and identify trends
 - Utilized statistical techniques, such as Covariance Analysis, PCA, and Clustering Algorithms, to identify outliers and anomalies in the data

LEADERSHIP

- MDS Program Ambassador**, Class of 2024 Sep 2023 – present
- Advocate for interdisciplinary collaboration and innovation
 - Act as a student liaison and provide mentorship to prospective data science students
- The Futurist Society at UCI**, Co-Founder & Vice President Apr 2021 – Jun 2022
- Co-founded a platform aimed at igniting discussions on cutting-edge technologies
 - Coordinated guest speakers and workshops that encouraged the exploration of new and future technologies