

# Serena Alvarez

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## EDUCATION

**Master's of Data Science**, University of California, Irvine  
Focus on Machine Learning and Artificial Intelligence

Sep 2023 – Dec 2024

**B.A. Quantitative Economics**, University of California, Irvine  
Specialization in International Issues and Economics  
Minors in Mathematics and Statistics

Jun 2022

## PROFESSIONAL EXPERIENCE

**R&D Intern, Machine Learning / Artificial Intelligence**,  
Electronic Warfare Associates (EWA)

Jun 2022 – Present | 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)

Deep-rooted expertise enabling data-driven decision-making, from crafting predictive models to automating data processes.

### TensorFlow, Pytorch

Engaging with the leading edge of deep learning technologies to sculpt models that not only predict but also innovate.

### Docker, Git/Github

Implementing containerization and version control to enhance project agility and team collaboration.

### Time Series Analysis, Econometric Analysis

Advanced application of statistical methods to unearth trends and inform strategies.

### Machine Learning, NLP (Natural Language Processing)

Hands-on creation of intelligent models that understand and interpret human language, driving intelligent automation.

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

Agile development of data pipelines ensuring efficient data flow and processing at scale.

### Data Visualization, MATLAB

Translating complex data sets into compelling visual stories for actionable insights.

## PROJECTS

**Analysis of Zidovudine Treatment on CD4 Count Dynamics in HIV Patients**

May 2021

- Collaborated on a team to investigate the effectiveness of Zidovudine treatments on CD4 counts in HIV patients
- Conducted rigorous statistical exploration, assessing treatment efficacy over time using Linear Mixed Effects Modeling
- Authored a detailed report to allow actionable insights for public health advancement

**Clinical Concept Recognition in Patient Histories Using Natural Language Processing (In-Progress)**

Feb 2024 – Present

- Developing an NLP model to identify key clinical terms from patient notes, to aid in a quicker and more accurate diagnosis.

## 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