Alexis Bryan Ambriz

linkedin.com/in/baambriz/ — github.com/Bryan-Az — bambriz.me

Summary — I've recently graduated with my M.S in Software Engineering and Data Science at San Jose State University. I have experience blending artificial intelligence into the education sector. My time in teaching was also the perfect prep in leadership.

Skills

Automation Ansible, Jenkins
Cloud DASK, Apache Spark, Kubernetes, AWS
Languages Python, Java, R, Matlab, HTML, PHP, CSS
OS Bash, Debian, Ubuntu, MacOS, Windows
Policies Reinforcement Learning via Human Feedback (RLHF), HIPAA
Testing Pytest, JUnit, Docker, Jenkins

Experience

TRUE ABA & ACES Comprehensive Educational Services **Oct 2022 – June 2023**
Registered Behavioral Technician
- Worked alongside a BCBA, providing services in home-based, clinic, and group settings.
- Tracking behavioral data and implementing beneficial mental health systems for clients.
- Reducing maladaptive behaviors and increasing client skills through implemented systems.
- Supported clients' progress towards better well-being.

Scripps Research Translational Institute **June 2022 – Aug 2022**
SARS-CoV-2 Software Research Intern
- Worked as a software research intern on a data science project in genetics and epidemiology related to COVID-19 within the Andersen lab.
- Guided the software development process for the project, including providing mentorship and project management support for less experienced interns.
- Collaborated with project mentor within the Andersen lab, contributing to software development and progress alongside a team of peers.
- Presented research findings at a poster session with co-interns at Scripps, communicating the project's outcomes.

Education

San Jose State University
Aug 2023 – May 2025
Master of Science in Software Engineering
Specialized in Data Science

University of California San Diego
June 2017 – March 2022
Bachelor of Science in Data Science
Minors: Education ; Cognitive Science

Certifications
- Introduction to Data Science in Python **– July 13, 2018**
- Deep Neural Networks with Pytorch **– Jan 2, 2022**
- Containers & Apps in AWS **– May 19, 2023**

Projects

WonderWords / Software Engineering **September 2024 – May 2025**
- Proposed, initiated and developed an end-to-end application and group project that generates self-contained / procedurally generated short stories targeted for children.
- The applications' framework is built with Flutter, allowing for the application to compile as a mobile (iOS, Android) and web application.
- Artificial intelligence in the form of one text-to-voice and two text generation neural networks (one for development and one for deployment) is used to craft engaging multimodal stories using various child- and adult-friendly prompting strategies.
- The application features the authentication of child accounts by connecting to a parent account to enhance privacy. Multiple databases are also used for this purpose.

Mathematics-Centered Neural Network / Data Science **September 2024 – December 2024**

- Proposed, initiated and developed a large language neural network and group project that is trained and fine-tuned to understand mathematics and logic while leveraging text generation as well.
- The model was evaluated on the basis of its ability to respond with precision as well as its ability to clearly explain how it was able to find a solution.
- We found that large language models prompted and trained to respond in pure numerical answers had very poor accuracy, while models that had been trained and prompted to respond with paragraph answers / a language scaffold performed much better. We also experimented with multiple strategies and model types.

Outbreak.info / Health Science **June 2022 – Aug 2022**

- Developed an extension of the functionality of Outbreak.info, a website offering data APIs and tools for research purposes.
- To further utilize worldwide SARS-Cov-2 data and resources for research, I helped create a Python package that provides similar capabilities to Outbreak.info's REST API. This new package aimed to be versatile and adaptable for various data needs.
- Developed a recursive method within the Python package to request data from the major endpoints of Outbreak.info. The function provided wrappers for specific data points like COVID-19 cases, lineages, and genomic data. This allowed users to easily extract different types of information.
- Improved the accessibility and usability of worldwide SARS-CoV-2 data for research by implementing a top-level recursive method for extracting data from multiple endpoints, flexible wrappers handling various data points, and addressing naming conflicts across administrative levels (city, state, country).

Particle Physics Result Replication **Sep 2021 – May 2022**

- Studied by replication of a project involving identifying Higgs boson particles using machine learning, leveraging data collected from CERN's Large Hadron Collider (LHC).
- The goal was to develop and implement a Machine Learning model for accurately classifying Higgs Boson particles based on their decay patterns.
- Utilized Python, specifically the UPROOT library to remotely load large datasets from CERN's LHC server to reduce memory consumption during processing. The awkward library further aided in converting this data into a usable format for visualization and ML tasks.
- Evaluated the model's effectiveness by comparing its accuracy to that of random selection using ROC and AUC metrics. The developed model achieved classification accuracy similar to published models, demonstrating its ability to accurately identify Higgs boson decay patterns.

Text-to-Image Machine Learning **June 2022 – Present**

- Initiated and developed a project investigating visual characteristics of Latin American & non-Latin American art through data analysis of open-source artwork.
- The goal was to develop a tool for processing, analyzing and extracting insights from open source artwork with the objective of understanding differences in styles between these two groups.
- Implemented a Python ETL pipeline using PIL for image data feature extraction, transformation, and loading. This included utilizing techniques like color schema analysis and visualization. The project also incorporated data scraping methods from the NGA API to pull information about artwork, which was then integrated with PostgreSQL for querying this data.
- The tool created visualizations of the aggregate color schemas across various art genres, facilitating the investigation of visual patterns between Latin America and non-Latin America. Further research will involve testing a text-to-image model to visualize NGA artworks based on text prompts. This model will help in understanding the presence of a detectable art style or thematic motif within the data, potentially identifying distinct characteristics associated with Latin American artistic expression.