

David Umanzor

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Education

University of Central Florida

Jan 2022 – May 2025

Bachelor of Science in Computer Science

Experience

CAE USA Inc – Machine Learning Engineer Co-Op

May 2023 – Aug 2024

Data Processing Pipelines:

- Created a repository for processing column-based data and training models using **Sklearn**, **XGBoost**, and **LightGBM**.
- Utilized **Kubeflow** and **Docker** to automate hyperparameter tuning with **Ray Tune**, optimizing model selection.

Simulation Agents:

- Implemented a collection of 9 core behaviors and multiple subtrees using **Rust** and **XML** for autonomous agents within Computer Generated Forces (CGFs) simulations.
- Contributed to white papers detailing the architecture and documentation for intelligent agents.

Data Analytics Layer:

- Implemented **MinIO**, **Trino**, and **Iceberg** on **Kubernetes** using **Helm charts**, laying the groundwork for a scalable data analytics layer to process simulation data from CGFs.
- This work set the stage for future expansion, including UI integration and enhanced data accessibility, as part of a collaborative effort within a 3-person team.

Florida A & M University – Undergraduate Researcher

Jun 2021 – Dec 2021

SMS Spam Detection with Transformers:

- Employed a Natural Language Processing model called **DistilBERT** to analyze a data set of spam and non-spam text.
- Conducted using **Python** libraries of **sklearn**, **NumPy**, and **pandas** to preprocess data and train the model.
- Achieved a high level of accuracy, with a Receiver Operating Characteristic (ROC) Curve of 98% True Positive Rate.

Identifying ASL with Machine Learning and AI:

- Developed a Convolutional Neural Network using **Keras** to accurately identify ASL images.
- Performed research using various **Python** libraries including **NumPy**, **seaborn**, and **sklearn** to preprocess data.
- Showcased the findings at the 2022 Florida Undergraduate Regional Conference (FURC).

Projects

Bloomberg Tech Lab on Campus – Fellow

Sep 2024

- One of 40 students was selected to collaborate with Bloomberg engineers in a small group setting to build an application using **RabbitMQ** and **Docker**.
- Utilized **Python** to design and implement a robust message queue system using **RabbitMQ**, enhancing real-time data processing and communication between producer and consumer components.

Campus Connect – Full-stack Developer

Jan 2024 – May 2024

- Developed a web application using the PERN stack to connect students to local events around their university.
- Employs a **React** Framework connecting to a **PostgreSQL** Database hosted on **Heroku**.
- Implemented complex user permissions and data integrity checks to ensure secure access to resources.

Fintracker – Front-end Lead

Sep 2023 – Dec 2023

- Led the front-end development of a web and mobile application using a MERN stack.
- Utilized **React** with **Bootstrap** to create a secure and user-friendly interface.
- Enabled users to manage and track their finances for budgeting purposes securely and easily.

Skills

Languages: Python, Rust, Java, MySQL, CSS, HTML5, JavaScript

Libraries: Tensorflow, pandas, numpy, scikit-learn, ray

Frameworks: Bootstrap, Ionic

Tools: Docker, Git, GitHub, Google Colab, Jupyter Notebook, Kubernetes, Visual Studio Code