David Umanzor

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EDUCATION

University of Central Florida | Bachelor of Science in Computer Science **Jan 2022 - May 2025**
Honors: NSF STRONG Scholarship GPA 3.3

Polk State College | Associate of Arts **Aug 2019 - Dec 2021**
Honors: CMD-IT Tapia Conference Jane Street Scholar 2021, 2022 All-Florida Academic Team

WORK EXPERIENCE

CAE USA Inc | Machine Learning Engineer Co-op **May 2023 - Aug 2024**

- Developed data processing pipelines: Created a repository for processing column-based data and applying machine learning models using Sklearn, XGBoost, and LightGBM. Utilized Kubeflow and Docker to automate hyperparameter tuning with Ray Tune, optimizing model selection and performance.
- Collaborated on behavior trees for simulation agents: Designed and 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.
- 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.

RESEARCH EXPERIENCE

Florida A & M University | NSF Undergraduate Research **Aug 2021 - Dec 2021**

SMS Spam Detection with Transformers

- Employed a Natural Language Processing model called DistillBERT 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

Florida A & M University | NSF Undergraduate Research **Jun 2021 - Aug 2021**

Identifying ASL with Machine Learning and AI

- Developed Convolutional Neural Network using Keras model 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)

SKILLS AND COURSES

- **Languages:** Python, Rust, Java, MySQL, CSS, HTML5, JavaScript
- **Libraries:** tensorflow, pandas, numpy, scikit-learn, ray
- **Frameworks:** Bootstrap, ionic
- **Tools:** Docker, Git, GitHub, Google Collab, Juypter Notebook, Kubernetes, Visual Studio Code
- **Courses:** Advanced Data Structures and Algorithms, Processes of Object Oriented Software Development, Artificial Intelligence

PROJECTS

Campus Connect 360 | Full-Stack Developer **Jan 2024 - May 2024**

- Developing a Web application using PERN stack to connect students to local events around their university
- Employs a React Framework connecting to a PostgreSQL Database hosted on Heroku
- Designed to handle multiple concurrent users and keep code base scale-able

FinTech | Front-end Lead **Sep 2023 - Dec 2023**

- Web and Mobile application using a MERN stack and CRUD operations on a list of accounts and bank information
- Role as Front-end lead for the web portion of the project utilizing React with Bootstrap Framework
- Designed to be a secure app to manage and track your finances for budgets to make better financial decisions

The Vault | Project Manager / Back-end Developer **Aug 2023 - Sep 2023**

- Web application using a LAMP stack that allows CRUD operations on a list of securely stored contacts
- Provides a secure place to store contacts with password hashing and ssl certificates
- Gained experience as Project Manager and working on API using php to connect javascript to mysql database