David Umanzor

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Education

- **University of Central Florida** — Orlando, FL
  Bachelor of Science in Computer Science; GPA: 3.3 — *Jan 2022 - May 2025*

Experience

- **CAE USA Inc** — Orlando, FL
  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** — Virtual
  NSF Undergraduate Research — *Jun 2021 - Dec 2021*
  - **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).
  - **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.

Projects

- **Campus Connect 360** — Jan 2024 - May 2024
  Full-Stack Developer
  - **Web Application Development**:
    - 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** — Sep 2023 - Dec 2023
  Front-end Lead
  - **Financial Management Application**:
    - 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 in a securely and easily.
- **The Vault** — Aug 2023 - Sep 2023
  Project Manager / Back-end Developer
  - **Secure Contact Storage**:
    - Developed a web application using a LAMP stack that allows CRUD operations on a list of securely stored contacts.
    - Gained experience as Project Manager and worked on an API using PHP to connect JavaScript to MySQL database.

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 Colab, Jupyter Notebook, Kubernetes, Visual Studio Code