Samuel H. Otero

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Active TS and SCI eligibility

EXPERIENCE

Senior Engineer, 4M Research, Inc., August 2023 - Present
- Pioneered **leveraging AI/ML tools and practices** in the Missle Defense Agency's Simulation Verification, Validation, and Accreditation team.
- Created an **MLOps pipeline**, Python package repository, and associated usage directions in a **secure, air-gapped development environment.**
- **Wrangled data** into multi-terabyte HDF5 formatted datasets ready for **exploratory data analysis** and **feature engineering**.
- **Mentored peers** in data analysis tools and techniques and Python programming, **increasing team member capacity** to complete tasks and function independently.

Data Scientist, COLSA Corporation, August 2022 - August 2023
- Developed an **object detection** and **image segmentation** model to process and label over **1 million images**.
- Constructed model cluster for **audio classification**, **speech summarization**, and **keyword tagging.**
- **Optimized** radio-frequency signals processing DNN models within a CI/CD MLOps pipeline.
- Performed exploration, analysis, and feature engineering to **improve data ingestion and processing**.

Research Assistant, Auburn University Physics Department, January 2019 - May 2021
- Investigated plasma wave phenomena by gathering, analyzing, and interpreting experimental data through **modeling, transformation, parameter correlation, regression analysis,** and **feature engineering.**

Research Assistant, Utah Valley University, September 2015 - May 2018
- **Automated analysis and visualization** of 150 GB of satellite data via **data mining** and **feature engineering.**
- Optimized engine efficiency via **statistical analysis** of data generated by computational models and simulations; presented findings at American Physical Society regional conference.
- Developed code to **transform image data** and perform **frequency analysis** for multiple image series **automatically**, reducing processing time by 40%.

EDUCATION

Graduate Studies, Physics, Auburn University, 08/2018 - 05/2021, *Research Fellowship*
Bachelor of Science, Physics, Utah Valley University, 01/2015 - 05/2018, *Dean's List*

SKILLS

Data Visualization/Engineering (Matplotlib / seaborn, Pandas, NumPy, SciPy, H5py)
Artificial Intelligence Techniques (Natural Language Processing (NLP), Computer Vision (CV), Anomaly Detection, Neural Networks, Machine Learning, Regression Analysis, Cluster Analysis, Hypothesis Testing)
Programming Tools and Frameworks (Python (TensorFlow 2.0, Keras, scikit-learn), Hugging Face, Git / Github / GitLab, MLflow)

CERTIFICATIONS

Mathematics, Statistics, Machine Learning, Deep Learning, Data Scientist - *365 Data Science*
SAFe Agilist - *Scaled Agile, Inc.*