Wesley Meredith

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Education

North Carolina State University **Aug. 2023 – May 2025**
M.S. in Computer Science *Raleigh, NC*

Clemson University **Aug. 2018 – May 2022**
B.S. in Biochemistry *Clemson, SC*

Technical Skills

Programming Languages: Python (PySpark, Pandas, NumPy, scikit-learn, TensorFlow), SQL, C++, C, HTML, CSS
Machine Learning: NLP, Regression, Classification, Clustering
Developer Tools: Git, Azure, Databricks, Docker, Kubernetes, PowerBI, Python Visualization (seaborn, matplotlib)

Experience

Data Scientist Intern **Michelin**
Greenville, SC *May 2024 - August 2024*

- Enhanced North American tire market potential forecasts by 5% through feature selection and integration of new demographic and weather data, leading to a projected $2 million in cost savings and replacement third party models.
- Developed a production-ready retrieval-augmented generation (RAG) NLP system using LangChain and Azure OpenAI, enabling efficient extraction of insights from unstructured text data.
- Led collaboration across three countries, effectively communicating technical findings to non-technical stakeholders, driving rapid adoption of the NLP tool by 50 test users.

Research Analyst **North Carolina State University**
Raleigh, NC *September 2022 - January 2024*

- Ensured accurate and informative data analysis for experiments by utilizing linear regression, GraphPad, and Excel software, leading to clear and impactful presentations of research findings.
- Analyzed RNA sequencing data to reveal novel downstream targets of cellular proteins in skin cancer cells, leading to valuable insights for future research directions.

Computational Biology Research Assistant **Clemson University**
Clemson, SC *November 2019 - May 2022*

- Published a peer-reviewed paper on predicting cancer cell combination therapy outcomes using a Python and MATLAB based Markov model.
- Streamlined laboratory workflows by programming an Opentrons OT-2 robot via Python for automated tasks, saving researchers time and improving efficiency.

Projects

Stock News Sentiment Analysis Tool | *Python, Flask, NLTK, VADER* **Natural Language Processing**

- Developed an NLP-powered Flask web application that extracts and analyzes financial news sentiment for a given stock ticker, helping users assess market trends.
- Applied natural language processing techniques to refine sentiment classification, leveraging NLTK's VADER model for financial news analysis. Optimized text representation through case normalization and punctuation handling to enhance sentiment accuracy.
- Integrated the News.org API to retrieve relevant news articles and displayed sentiment insights in a structured, interactive table, aiding data-driven investment decisions.

Housing Price Prediction Challenge | *Python, scikit-learn, TensorFlow, Keras* **Machine Learning**

- Conducted comprehensive exploratory data analysis (EDA) to gain insights into the Ames Housing dataset, identifying key patterns and trends, and communicating through insightful data visualizations via Seaborn and Matplotlib.
- Enhanced prediction accuracy by 15% through implementation and optimization of decision tree, random forest, XGBoost, and ANN models.
- Secured a top 12% ranking (among 24,000 participants) on Kaggle's housing price prediction challenge by applying machine learning algorithms, feature engineering, and hyperparameter tuning techniques via scikit-learn grid search.

Drowsiness Detector | *Python, OpenCV, dlib* **Computer Vision**

- Developed a real-time, webcam based drowsiness detection system utilizing computer vision techniques (OpenCV, dlib) with a focus on addressing Zoom meeting fatigue and enhancing personal productivity.
- Implemented a sophisticated EAR (Eye Aspect Ratio) threshold algorithm for accurate detection of drowsiness, allowing for personalized alerts tailored to individual drowsy patterns and preferences.