JACKSON MAYFIELD

DATA SCIENTIST + ENGINEER

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ABOUT

I am currently transitioning from the field of scientific research and am seeking roles as a Data Scientist.

I have always been interested in a career that will allow me to inspect things on a deeper level. While working as a research assistant, I found a passion for explaining scientific theory with concrete data analysis. In the future, I hope to use my skills to manage and analyze health science data to address important questions in public health and biomedical sciences.

PROJECTS

VANDERBILT ACCRE PROJECT

- Analyzing memory usage on graphical processing units for advanced computing department using Python.
- Our analysis led to an optimization of resources based on runtime usage of existing hardware

MID-COURSE PROJECT

- Built an R Shiny application to analyze bioinformatic data to find potential drug therapies for different diseases
- Utilized random Forest ML algorithm to produce concentration value predictions on viable molecules
- All data collected from the ChEMBL database of bioactive molecules with drug-like properties

TECHNICAL SKILLS

- Python (pandas, NumPy, matplotlib)
- R (tidyverse, dplyr, caret, ggplot2, shiny)
- SQL (PostgreSQL, pgAdmin 4)
- MATLAB
- Web Scraping
- GitHub / Git Bash
- Hardware Development
- Data Visualization
- Data Wrangling
- Machine Learning

EDUCATION

DATA SCIENTIST APPRENTICE

2023 | Nashville Software School

BACHELOR OF SCIENCE – Biomedical Engineering

2021 | University of Tennessee, Knoxville

DATA SCIENCE TRAINING

DATA SCIENTIST APPRENTICE | September 2022 – June 2023 | Nashville Software School

Intensive part-time bootcamp focusing on data science fundamentals and problem solving. Used real-world datasets and included projects where findings were presented to stakeholders from the community.

- Wrangled data and performed exploratory data analysis using Python's *pandas* library and R's *tidyverse* packages
- Created data visualizations using *matplotlib*, *seaborn*, and *ggplot2*
- Performed geospatial analysis using *geopandas* and *folium*
- Gathered data through APIs and web scraping
- Retrieved and analyzed data using PostgreSQL and *sqlalchemy*
- Built and evaluated statistical and machine learning models using the *scikit-learn* and *statsmodels* libraries
- Applied natural language processing using the *nltk* and *spaCy* libraries
- Performed network analysis on graph data using Neo4j
- Built and deployed interactive data visualizations using the R *Shiny* library
- Project management/tracking with GitHub project boards and issue tracking
- Interacted with AWS using the CLI and ssh

PROFESSIONAL EXPERIENCE

RESEARCH ASSISTANT | Jul 2021 - Current | Vanderbilt University Medical Center

- Member of the Ramachandran Laboratory, which focuses its research on the auditory perception in normal and hearing-impaired subjects
- Responsible for accurate and timely analysis of psychometric and neurophysiological data obtained from nonhuman primate (NHP) models for various auditory laboratory experiments
- Primary activities include the following: experiment data collection and computer hardware setup, MATLAB programming for analysis, assisting with journal publications, laboratory administrative duties

RESEARCH AND DEVELOPMENT INTERN | Jan 2020 – Apr 2020 | University of Tennessee Space Institute

- Aided graduate students in the Center for Laser Applications laboratory, where we studied the application of anti-fogging materials onto surgical glass lenses for use in laparoscopes.
- Primary responsibilities for the lab included the following: materials synthesis, optical spectrophotometry, soaking tests, adhesion tests, contact angle measurement, and surface energy calculation. Also assisted with biocompatibility testing

UNDERGRADUATE RESEARCH ASSISTANT | June 2018 – Oct 2018 | University of Tennessee, Knoxville

- Research on Brain Computer Interface (BCI) technology and commercial biomedical product development
- Mainly responsible for aiding in selection of optimal signal classifier algorithms for use in various BCI technology used in the laboratory

ACCOMPLISHMENTS

Authorship - Authorship on published paper in the Journal of Neurophysiology-

- Mackey CA**,** Dylla M, Bohlen P, Grisby J, Hrnicek A, **Mayfield JM**, Ramachandran R. "Hierarchical differences in the encoding of sound and choice in the subcortical auditory system"

Presenter of Undergraduate Research at the National BMES Conference

- Presented summer research abstract with local UTK chapter at the 2018 National BMES Conference in Atlanta, GA Titled: "On Development of a Mind-controlled Wheelchair for Brain Injury Rehabilitation"

Pete Barile Sr. Design Competition Scholarship Winner

- Received this award for outstanding work with prototype development and business idea innovation in Engineering Fundamentals project work during the second semester of college.