THOMAS MATTHEWS

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OVERVIEW

An avid problem-solver and data enthusiast fascinated by the power of logical thinking and data-driven decision making seeking a Data Analyst/Modeller/BI Developer position. I am a curious and creative thinker with an innate ability to master unfamiliar topics and development tools and apply existing STEM skills to produce analytical solutions, as evidenced by my successful project experience. With an objective, even-keeled nature and mission-driven attitude I am looking for challenging and rewarding problems to take raw data and create valuable insights in support of impactful decisions and actions.

RELEVANT SKILLS

Hard Skills

- R
- SQL
- Excel
- Data Cleaning
- Statistics
- Mathematica
- Python
- DBMS Fundamentals
- Tableau
- EDA
- LaTex
- SolidWorks CAD

Soft Skills

- Team Player
- High EQ
- Effective Communnicator
- Accountable/Dependable
- Project Management
- Strong STEM aptitude

EDUCATION

Northeastern University

Graduate Certificate in Data Analytics from The Roux Institute *Fall 2021 - June 2022*

Lafayette College

B.S. in Mathematics & Physics *September 2017 - May 2021*

Honors & Awards

National Merit Scholar, Lafayette College Marquis Scholar, High School Salutatorian

EXPERIENCE

Independent Project on Common Loons and Climate Change *Sep. 2022 - Present*

Data Analyst/Programmer

Conducting data analysis and programming in collaboration with a biology professor studying the impact of climate change on behavior of Common Loons.

- Utilized R packages and eBird native API to extract relevant data from eBird online database into R to conduct analysis.
- Sourced and incorporated geophysical data from NOAA to determine physical environment of birds.
- Computed measures for outliers, central tendency, variance, distributions, etc.
- Documented inherent limitations of the reported observations while showing a novel yet complex source of insights into loon behavior, culminating in the discovery of a trend of increased northerly outliers and variance.
- Used R packages (ggplot, mapview, tidyverse, etc.) to create graphs, visuals, and statistics for publications and presentations.
- Presented findings to Northeast Loon Study Working Group.

NovaStar Prep *Contractor, 2021-Present*

Academic Tutor

Academic Coach for Advanced Mathematics and Physics

- Connect with students long-term to impart understanding and guide personal development.
- Promote critical thinking, helped students understand the 'why', and collaboratively transformed students' thoughts about subjects from negative and demoralizing to enthusiastic and fulfilling.

Lafayette College *Summer 2020*

Researcher and Programmer for SET™ Math Research

Researched the mathematics behavior of the SET™ pattern matching game.

- Wrote and optimized object-oriented Python program to recreate the SET™ pattern matching game's logic using modular arithmetic and manipulated large arrays.
- Designed functionality to allow for varying sets of initial conditions and wrote several custom algorithms used to play the game, save and output data, and compile this output into research insights.
- Made new discoveries into mathematical behavior under specific conditions, and determining which variables increase the opportunity to complete the game.
- Provided solid platform for ongoing research.

University of Virginia *Summer 2020*

Research Intern/Software Tools Developer for Astronomical Data Analysis

Provided additional technical resources to support mentor's research on galaxy/star formation in the early universe.

- Collected additional data required, correctly identifying and matching faint galaxies around bright stars in photometric infrared to find cross-correlations between data sets at different wavelengths.
- Used algorithms from libraries (numpy, scipy, astropy) to analyze and manipulate large multi-dimensional data array.
- Created algorithms to scan the image for significant areas, and retrieve interesting data points for further study.
- Created and documented custom software tool in Python to be used in mentors' research
- Acquired skills needed in processing and storing large arrays of data to locate and extract points of interest.

Mega Industries, LLC *Summer 2019*

Research Intern

Designed, simulated, built, tested, and optimized a prototype for Gysel high-power microwave energy combining system.

- Responsible for navigating the design process to completion for an R&D project.
- Set project goals and timeline for production of prototype and provided documentation and overall evaluation of results in final report.
- Utilized simulation tool to create parameters, transferred the design and models to mechanical drawings using Solidworks CAD, machined, assembled, and evaluated prototype using a microwave network analyzer.