Ryan Millham

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EDUCATION

University of Michigan **Ann Arbor, MI**
Bachelor of Science in Computer Science, Astrophysics, & Interdisciplinary Physics *April 2026*
GPA: 3.69 / 4.00 - with Honors - Two Time Recipient of James B. Angell Scholar Award
Coursework: Data Structures and Algorithms, Intro to Computer Organization, Principles of Economics, Intro to Data Science, Intro to Differential Equations, Intro to Multivariable Calculus, Computational Astrophysics, Thermodynamics

Semester at Sea **11 Ports in 10 Counties**
Study Abroad *January 2024 - April 2024*
GPA: 4.00 / 4.00 - Dean's List
- Traveled to 11 ports in 10 countries, including three ports in Asia, six ports in Africa, and two ports in Europe
- Completed 4 courses maintaining straight A's; focused on international relations, social justice, and political awareness
- Planned, organized, executed, and led group travel plans; exhibiting **communication** and **management skills**
- Managed frequent unexpected obstacles, strengthening **adaptability** and **tenacity** in suboptimal foreign conditions

SKILLS

Quantitative Analysis: Modeling, Data Science, Statistics, Machine Learning, Classification, Interpolation, Bootstrap
Computer: C++, Python, MATLAB, Linux, Pandas, Github, Unit Testing, End to End Testing, Debugging
Math and Physics: Discrete Math, Differential Calculus, Multivariable Calculus, Electricity and Magnetism, Mechanics

WORK EXPERIENCE

LIGO Scientific Collaboration **Ann Arbor, MI**
Assistant Researcher *May 2023 - Present*
- Innovated and implemented advanced **MATLAB** models and tools to simulate and track the impact of data cleansing algorithms on gravitational wave data, enabling accurate isolation of artifacts introduced during automatic processes
- Identified a **300%** overuse of data cleansing algorithms, which led to artifacts being **1000%** stronger than expected; clearly and concisely communicated the issue to leadership and initiated a solution greatly improving data quality
- Created and maintained a database optimized for ease of access, intuitive organization, and efficient data management
- Coded **HTML** webpage to automatically produce and display findings on a **remote Linux server** for visualization

Mangy Moose Restaurant and Saloon **Jackson, WY**
Server, Busser & Food Runner (Seasonal) *May 2020 - August 2023*
- Efficiently managed high-volume restaurant service by bussing tables, running food, and waiting on customers, leading to an increase in table turnover rate and maintaining a fast-paced, organized dining environment
- **Trained and mentored** new staff members, including bussers, food runners, and waiters enhancing team performance and ensuring adherence to restaurant standards and customer service protocols
- Delivered exceptional customer service in a chaotic and stressful setting resolving issues promptly and professionally while consistently receiving positive feedback

PROJECT EXPERIENCE

University of Michigan **Ann Arbor, MI**
EECS 281 - Data Structures and Algorithms *May 2024 - June 2024*
- Designed and implemented and tested priority queues in **C++** to simulate a stock market then constructed trading applications to **identify optimal buy and sell times**, theoretically enhancing the accuracy of future market predictions
- Created a log manager environment in **C++** that balances runtime and storage efficiency by optimizing space and time complexity for features such as searching, sorting, copying, and manipulating data across multiple data structures
- Implemented a **C++** solution for the Traveling Salesman Problem by combining Prim's Algorithm with a Branch and Bound approach, achieving an optimal solution within a highly efficient timeframe

ASTRO 406 - Computational Astrophysics *August 2023 - December 2023*
- Implemented **machine learning** in **Python** to classify types of galaxies using Gaussian Mixture Modeling, Support Vector Machine, and Random Decision Forest, achieving an accuracy score of **99.8%**
- Implemented **predictive modeling** utilizing bootstrapping, statistics, and Forward and Orthogonal fits in **Python**
- Created **Markov Chain Monte Carlo** algorithms, yielding an **acceptance rate of 0.37**, matching **SciPy** algorithms

ACTIVITIES

University of Michigan Men's Rowing Team, *Athlete* *September 2022 – May 2023*
Boy Scouts of America, *Eagle Scout* *August 2013 - February 2020*