

# Michael Morton

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## EDUCATION

**University of Maryland**, College Park MD  
Bachelor of Science, Computer Science, Minor in Mathematics

Expected May 2027  
**Cumulative GPA:** 3.84 / 4.0

## RELATED SKILLS

**Languages:** C/C++, Java, Python, JavaScript, SQL, TypeScript

**Frameworks and Tools:** Git, Bash, AWS, NodeJS, React, PostgreSQL, Flask, Version Control, Data Visualization, Front and Backend Development

**Github:** [github.com/batabutter](https://github.com/batabutter)

## RESEARCH EXPERIENCE

**University of Maryland: Department of Environmental Science**

August 2025 - Present

*Research Assistant - Environmental Monitoring with Low-Cost IoT Sensor Network*

College Park, MD

- Collaborated in a 4-person team to develop a web app that showcased sensor information used for environmental monitoring for 2 researchers
- Built a responsive frontend in TypeScript with live charts that displayed CO2 and PM2.5 information with less than 1 second of latency
- Expanded backend with Node.js/TypeScript to serve sensor data, created custom RESTful API for 4+ sensors in the DMV area

**University of Maryland: Department of Astronomy**

April 2025 - Present

*Research Assistant - Radiative Transfer Coherent Backscattering (RT-CB)*

College Park, MD

- Developed Python scripts to visualize data table output from an open-source RT-CB program, contributing to the analysis of planetary surfaces using backscattered light with hundreds of data points
- Programmed charts that exhibited brightness and polarization using Matplotlib and Jupyter Notebook for analysis supporting 3+ researchers
- Modified parameters using Fortran with the RT-CB program to simulate backscattering observed in real planetary bodies over 30+ simulations

## PROGRAMMING EXPERIENCE

**Personal Project**

December 2025 - January 2026

*Multiplatform Pomodoro Timer*

College Park, MD

- Built a multiplatform pomodoro timer using HTML, CSS, and ElectronJS
- The timer allows the customization of the background, color of the work and break timers using saved JSON data
- Timer was packaged using ElectronForge and is available for Windows and Linux installations. Preset options for customizations can be loaded into the timer

**Personal Project**

July 2025 - August 2025

*Audio Resource Management Tool*

Elkridge, MD

- Developed a Discord application using JavaScript that streamed high-quality music from YouTube to users in real-time with under 2 seconds of download to streaming across tens of servers
- Planned an architectural model that is modular and emphasized robustness to ensure a smooth user experience that is nearly 4x more reliable when compared to other applications on Discord

**Personal Project**

May 2025 - December 2025

*UMD Mobile Forum App*

Elkridge, MD

- Built a cross-platform mobile application that would enable students to share course and professor information through posts, voting, and comments
- Improved the frontend in React Native alongside Expo Router, compared to other forums
- Backend was built using PostgreSQL and Node.js which increased efficiency of API calls by 50%
- Organized a custom database with SQL, created a RESTful API to facilitate efficient CRUD operations