# Matthew Miller

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## Education

**Marshall University** Huntington, WV

*M.S. in Computer Science, Minor in Mathematics and Digital Humanities* *Expected May 2025*

**Activities and Societies**: Vice President of Marshall University Technology Association
Member of Marshall University Game Design Guild

## Experience

**Blockchain Research Intern** May 2023 – July 2023

*National Science Foundation* *Boise, ID*

- Designed a reputation-based consensus protocol for scientific workflow provenance on a decentralized distributed ledger
- Utilized numpy and pandas to evaluate and validate the scalability and fairness of the implemented solution
- Published a research paper to IEEE conference

**Undergraduate Research Assistant** January 2023 – Present

*Marshall University* *Huntington, WV*

- Worked on multiple funded projects from departments within the College of Engineering and Computer Science
- Developed virtual reality (VR) program in Unity3D for heat stress recognition and prevention training funded by OSHA
- Designed and implemented a 3D human behavior model to simulate evacuation egress

**Teaching Assistant** August 2022 – December 2022

*Marshall University* *Huntington, WV*

- Assessed and evaluated hundreds of major programming assignments for 40+ students in computer science courses
- Identified areas for improvement and provided constructive feedback for students

**Full Stack Developer** May 2022 – August 2022

*West Virginia State Police* *Charleston, WV*

- Designed and developed a web app for the WVSP Professional Development Center
- Utilized Blazor to connect to Microsoft's GraphAPI and format Outlook calendar events

## Projects

**VR Drunk Driving Simulator** | *C#, Unity3D, SQLite, Git* August 2022 – December 2022

- Lead the development of an immersive drunk driving simulator to raise awareness of the dangers of driving under the influence
- Experience five increasing levels of blood-alcohol content (BAC) simulated by input manipulation and realtime visual effects
- Developed a scoring system to gauge how driving was affected at each level–takes into account speeding, running stop signs, and lane control
- Utilized SQLite for managing user records which were manipulated through the execution of C# functions

**VR Programming Education Tool** | *C#, Unity3D, Git* January 2023 – May 2023

- Spearheaded the creation of a VR program aimed at encouraging younger students to take interest in virtual reality and computer programming
- Implemented a 'drag and drop' interface, akin to Lego blocks, allowing users to construct small scripts via pseudocode written on the blocks
- Provided an engaging and interactive platform for students to learn and experiment with fundamental programming principles

## Technical Skills

**Languages**: Java, Python, C#, SQL (SQLite), HTML/CSS
**Developer Tools**: Git, VS Code, Visual Studio, Unity3D, Eclipse, OOP, SQLite3, Minix, Blender