

# Jonathan Wich

jwich1908@gmail.com | 615-274-1813 | [jonwich.fyi](mailto:jwich1908@gmail.com) | [github.com/JonDWich](https://github.com/JonDWich) | [linkedin.com/in/jon-wich](https://www.linkedin.com/in/jon-wich)

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## EDUCATION

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**Middle Tennessee State University, Murfreesboro TN**  
Bachelor of Science in Computer Science

**Expected Graduation: 2026**

## SKILLS AND ABILITIES

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**Experienced in:** Lua, Python

**Working Knowledge:** C/C++, C#, HTML, CSS

**Other:** Strong memory and communication skills. Adept at learning and operating in bespoke environments.

## PERSONAL PROJECTS

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*For more information, please see my website attached at the top of this page.*

**Physics Overhaul** – Designed and implemented a system for character movement physics using Lua.

- Incorporated into an existing game without modifying the underlying character controller.
- Created a framework for scripting entirely new characters and extending existing actions.
- Developed a library to simplify using pointers for data retrieval and memory manipulation.
- Built a framework to handle loading additional mods that modify the same game archive without conflict.

**Animation Viewer** – Created an in-game animation viewer by leveraging game functions in Lua.

- Built a database to store and manage 1,000+ strings separated into substrings.
- Designed and implemented functions for assembling and traversing pages by reconstructing stored strings.

**Roguelike Prototype** – Developed a randomly generated maze game inside *Sonic The Hedgehog 2006* via Lua.

- Fully featured Roguelike Dungeon Crawler where the player navigates randomly generated rooms and puzzles.
- Custom pathfinding algorithm to solve mazes, guard against unbeatable layouts and aid maze generation.
- Bespoke item/inventory system using OOP.
- Constructed entirely within the constraints of the game's native Lua implementation.

**Combat Extension** – Expanded the combat of *Sonic Frontiers* using Lua then rewrote the project in C#

- Inheritance focused design to accommodate 5 unique gameplay styles.
- Added new systems for extrinsic and intrinsic reward while adhering to the original game design.

## Accolades/Other Works

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**Best Technical Work (Honorable Mention)** – Sonic Hacking Contest 2023 – Roguelike Prototype

**Best Boss Design** – Sonic Hacking Contest 2023 - Roguelike Prototype

**Best Fresh Concept** – Sonic Hacking Contest 2023 - Roguelike Prototype

**Gravity Circuit** – Credited with Playtesting and Feedback

- Provided extensive testing and feedback on gameplay and design throughout later development.
- Identified and replicated countless crashes and bugs, from mild (graphical) to major (inverting gravity).

**Sonic Project 06** – Credited with Special Thanks as “Gordin Ramsay”

- Assisted via extensive beta testing, feedback, and reverse engineering portions of the original game.