William Hager

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Education

University of Rochester   Rochester, NY
- B.S. in Computer Science, anticipated Spring 2028
- GPA: 3.96/4.00
- Dean's Scholarship, All Semesters
- Coursework: Data Structures and Algorithms, Formal Models of Computing, Discrete Mathematics, Calculus II

Projects

Runesworn   Spring/Summer 2025
- Designed and developed a **dice-rolling RPG video game** with Godot engine and GDScript (**Python**), using over 2500 lines of code to implement turn based combat and character building
- Created **database and data management system** to efficiently store and retrieve game and player data, including 12 unique encounters and 3 playable characters, as well as 12 unique dice
- Established and balanced core game mechanics with a small-scale playtesting group in order to ensure balanced and enjoyable gameplay
- Managed game lifecycle with expected beta release in December 2025

Street Mapper   Fall 2024
- Wrote over 880 lines of **Java** code to implement a street mapper that took coordinate inputs and generated a map using a **self-implemented graph data structure**
- Displayed information in a Java Swing UI
- Implemented **Dijkstra's Shortest Path algorithm** to simulate a navigation software experience

Nondeterministic Automaton Simulator and Converter   Spring 2024
- Developed over 870 lines of **C** code to create a simulated Nondeterministic Finite Automaton (NFA) and conversion algorithm to a Deterministic Finite Automaton (DFA) using subset construction
- Included custom NFA and DFA frameworks that can be used via header files for substring and binary character matching

Work Experience

Undergraduate Research Assistant, Rochester Human Computer Interaction Lab   Rochester NY | Fall 2025 - Present
- Contributed to development of *SOPHIE*, a virtual **LLM-based avatar** built through **Python** and **Tavus**, designed to help medical professionals improve bedside manner and deliver difficult news to patients
- Assisted in selecting and **curating training data** to improve model realism and create a human-like experience
- Collaborated with multidisciplinary research team in weekly lab meetings to evaluate project progress and provide feedback on usability and **AI-driven computing**

Lifeguard, Riverton Community Pool   Rochester NY | Summer 2025
- Ensured pool patron safety through **clear communication** of pool rules as well as in-water rescues
- Managed pool area and upkeep of pool facilities
- Tracked and adjusted pool chemical levels

Swimming Instructor, Rush Henrietta Central School District   Rochester NY | Winter 2021 - Winter 2023
- Taught American Red Cross Learn to Swim courses from levels 1-6, as well as baby/toddler courses and adult swimmers
- Worked with children and parents to ensure students understood proper pool safety

Skills

Programming Languages: Java, C, Python, GDScript, HTML, CSS
Frameworks: Java Swing, Java AWT, JavaFX, LibGDX, scikit-learn
Technical Skills: Object-Oriented Programming, Linux/Unix, Visual Studio Code, Valgrind, Front End Web Development

Volunteer Work

Scouts BSA Eagle Scout Project   Fall 2022
- Completed full design, planning, and construction of standing gardens and roof overhang at local senior center
- Logged over 120 hours of volunteering between myself and all workers led