

ZHI ZHENG

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EDUCATION

Rensselaer Polytechnic Institute

M.S. in Computer Science : **GPA: 3.86/4.0**

Aug. 2023 – May. 2024

Troy, NY

Rensselaer Polytechnic Institute

B.S. in Computer Science & Game Development: **GPA: 3.74/4.0**

Aug. 2020 – May. 2023

Troy, NY

EXPERIENCE

Game Programmer

September 2023 – March 2024

Rather Be Fishing

Troy, NY

- Developed at a small local indie game studio using Unreal Engine 5: **Messozoic**
- Implemented and organized several scalable systems, these systems include space efficient saving/loading, various UI systems, inventory management, custom base building mechanics (attaching various skeletons together), and puzzle gameplay mechanics.

Undergraduate Teaching Assistant for Algorithms

August 2022 – December 2022

Rensselaer Polytechnic Institute

Troy, NY

- Held office hours, graded homework assignments and included feedback for students.
- Class topics include: Algorithm Analysis, Graph Theory & Algorithms, Greedy Algorithms, Network Topology, Dynamic Programming, Flow Networks, and NP-Hard Problems.

Research Assistant

June 2022 – August 2022

Institute for Data Exploration and Applications (RPI IDEA)

Troy, NY

- Worked with a multi-dimensional visual hardware, *The Campfire*, to simulate unique environments.
- Developed an emergent and dynamic Force Directed Graph with a geometric constraint. Including an interactive visual display for nodes to select edge connections for the Force Directed Graph.

PROJECTS

Geo-Vegetation Spatial Information Model | *JavaScript, Vite, React, Python*

April 2024

- Established a unique tool for agricultural analysis by working on a geo-vegetation spatial information model. Vegetation (NDVI) and precipitation data are stored in a AWS container, then dynamically loaded on a vercel app that renders our visualization. We developed a legend, check boxes to enable and disable data and a calendar to look at any particular date. Data is scraped from NASA, NOAA, and USGS.
- Link to view the information model: xinfo.vercel.app

Project Protocol | *Python, JavaScript, React, Open Source*

May 2023

- Produced a protocol simulator that takes in a .json format file of nodes and links and transforms it into devices and wires. Then runs through the simulation and outputs the simulation with a visualization of sending and receiving information through devices.
- Helped lead with the project coordinator in developing the simulation, visualizer and website.

Custom Game Engine | *C*

December 2022

- Created a multithreaded custom game engine utilizing the windows API and vulkan as the graphics engine.
- The game engine includes a detector that reports memory leaks at where the memory is allocated, an asynchronous file decompression system using LZ4, a CPU profiling system that creates a trace of the CPU thread and outputs it as a chrome trace, and a simple game with bounding boxes.

CPU Scheduling Simulator | *C*

July 2022

- Developed four different algorithms for simulating CPU scheduling (FCFS, RR, SJF, SRT) with various and randomized test cases. All processes are forked and all algorithms run with timed results.
- The test cases are recorded with statistics such as average CPU burst time, average wait time, CPU utilization, average turnaround time, context switches, and preemptions.

SKILLS

Technologies/Frameworks: C++, C#, C, Python, Java, JavaScript, TypeScript, SQL, LaTeX, Git, Microsoft Office (365), Linux, Eclipse, React, Unity, Unreal Engine 5, OpenCV, Visual Studio 2022, Perforce SCM, Plastic SCM, Numpy, Pandas, Tensorflow, PyTorch, HDF5