

Samuel Wortley Sage

AI / Gameplay Programmer

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Professional Experience

Associate Engineer, Author *Digital / Adept Games* Apr 2020 - Feb 2021

- ❖ Built Unity systems using MVC code design pattern for a 4X strategy game
- ❖ Worked in multi-disciplinary Scrum teams to develop iterable features
- ❖ Wrote editor tools to manage version control artifacts used across teams
- ❖ Researched, documented, and recommended Unity tools vs 3rd party tools
- ❖ Gave code reviews using Perforce Swarm to understand and improve code

Web Developer, World Wide Lightning Location Network Jun 2018 - Apr 2020

- ❖ Built website to report data on live hurricanes around the world
- ❖ Worked in existing backend database using Python, Django, and MySQL
- ❖ Designed frontend site using HTML, CSS, Javascript, and Bootstrap

Academic Projects

Independent AI / World Generation Project Sep 2019 - Apr 2020

- ❖ Generated custom terrain with Perlin noise and diamond-square algorithms
- ❖ Textured terrain with Unity Shader Graph based on height and moisture
- ❖ Populated biomes with environmental props using Perlin noise
- ❖ Constructed UI to live-update generation parameters and view changes

Technical Director / AI Programmer, Hallowed Under Sep 2018 - Apr 2019

- ❖ Built 3D game engine for team of 20 artists, designers, musicians and coders
- ❖ Developed core functionality in C++ using slotmap for constant time insertion, access, and deletion of components and objects
- ❖ Programmed Unity behavior tree framework for quick design iteration
- ❖ Wrote enemy AI with patrol paths, sight cones, and navmesh navigation
- ❖ Led team in pivoting from custom engine to Unity to meet milestone goals

Technical Director / Co-Producer, Daybreak Sep 2017 - Apr 2018

Featured at PAX West 2018 | games.digipen.edu/games/daybreak-1

- ❖ Wrote engine and gameplay in C++ for a 2D game using ECS architecture
- ❖ Implemented physics, serialization, particle, and flocking AI systems
- ❖ Engineered system analytics to identify and fix inefficient systems

Other AI Projects

- ❖ Built A* in C++ pathfinding with smoothing, rubberbanding, and 4 heuristics
- ❖ Used influence mapping and propagation to implement cover analysis, visibility, and hide-and-seek AI between agents in C++
- ❖ Developed group zombie-survival AI using Goal Oriented Action Planning

Education

BS in CS and Game Design

DigiPen Institute of Technology

Graduated Apr 2020

- ❖ Cumulative GPA: 3.50

Languages

- ❖ C, C++ (Proficient)
- ❖ C# (Proficient)
- ❖ HTML, CSS (Familiar)
- ❖ JavaScript (Familiar)
- ❖ Python (Familiar)

AI Techniques

- ❖ A* Pathfinding
- ❖ Influence Mapping
- ❖ GOAP AI
- ❖ Smart Objects
- ❖ Behavior Trees
- ❖ State Machines
- ❖ Flocking / Herding

Tools

- ❖ Unity
- ❖ Atlassian Tools
- ❖ Version Control
- ❖ Perforce Helix Swarm
- ❖ Windows, Linux
- ❖ GCC, G++
- ❖ Visual Studio
- ❖ Photoshop, Maya

Professional Skills

- ❖ Agile Methodology
- ❖ Time Management
- ❖ Cross-team Teaching