Seeking early career opportunity

I am looking to apply my professional software development ability and physics background while learning new technologies and skills. I am curious, hard-working, and reliable.

Key Skills

- Strong background in physics and mathematics
- C# pro
- Experience with both object oriented and data oriented programming.
- Experience with Python, HTML/CSS, JavaScript, CI/CD, Powershell, YAML, and SQL

Software Skills: .NET, Linux, Unity, JIRA, Blender, Git, Gitlab, GIMP, Nuget

Work experience

Immersive Wisdom- Software Developer **Fall 2020- Winter 2022**
At Immersive Wisdom I primarily did core product development. In this position I worked on dozens of projects, ranging from a system to consume and display satellite imagery on a dynamic 3D globe, to creating UI and chat that was networked between real time users. I also helped automate our Gitlab pipeline to automatically create Nuget packages from our library projects, and made an installer for our product that pulled dependencies automatically.

Charles River Analytics- Human Effectiveness Software Engineering Intern **Summer 2019**
I rapidly prototyped flight simulator displays. I handled ingesting and displaying information in the form of Distributed Interactive Simulation (DIS) Protocol Data Units. I used Unity, a game-engine, to create industry standard aeronautics displays that I populated with the simulation data. I used a multithreaded UDP client to synch my application with the simulation, and to send user input to the simulation. This project was just beginning, so being able to radically revise my project to meet changing client specifications was an important part of my job.

Teaching Assistant- Game Design **Spring 2019-Spring 2020**
I attended class to help it run smoothly and to answer student questions. I hosted a weekly lab to expand on what was covered in class and helped students with their projects. I occasionally taught class on my areas of expertise in Game Design: game physics and multiplayer networking I was responsible for playtesting student games and provided detailed feedback. During a third semester I helped write and test the curriculum for a new Advanced Game Design class.

Research Assistant- Tufts Physics Lab **2016-2017 Academic Year**
Freshman year I worked with Professor Hugh Gallagher to model neutrino interactions using Python and CERN's custom ROOT language. My primary task was data visualization/analysis. I compared how our model handled electron/nucleus interaction compared to neutrino/nucleus interaction.

Education

Tufts University, Boston, Massachusetts
2016 - 2020
BS in Physics with a focus in Computer Science

Relevant Coursework:

Data Structures, Electricity and Magnetism, Game Design, Advanced Game Design, Computation Theory, Guided Study of Procedural Animation, Differential Equations, Linear Algebra, Intro to Computer Science,

Virtual Reality, Introduction to Modern Physics, Biophysics, Mathematical Methods for Physicists

Selected Portfolio

Crashblox- Voxel-based multiplayer game: https://crashbloxserver.net

For this project I implented custom WebRTC networking, a voxel engine using an adapted Greedy Meshing algorithm, and client-prediction netcode.

Langton's Ant, a cellular automata: https://github.com/RussellRuffolo/Langtons-Ant

Multiplayer train game, made with team of 4: https://github.com/JamaicanMoose/train-to-somewhere
(On this project I built the interaction system and handled all net code)

Professional References:

Denver Coulson - CTO @ Immersive Wisdom - denver@ImmersiveWisdom.com

Marianne Chiarella - Senior Software Developer @ Charles River Analytics - chiaremari@gmail.com

Hugh Gallagher - Professor @ Tufts University - hugh.gallagher@tufts.edu