Matthew Russell

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clarvel.github.io

EDUCATION

University of Minnesota — Minneapolis, MN
B.S. Computer Science — 2011-2015

University City High School — St. Louis, MO
2007-2011

EXPERIENCE

minMOG — St. Louis, MO
Developer — Feb 2017 - Present
* Worked with Animator and Producer to develop SNARF! a 3D mobile game on IOS and Android
* Created the Core Gameplay Loop with increasing AI difficulty over time
* Developed minimal UI and controls so players can focus on the game
* Created a unique attacking system that takes into account size difference and direction of attack

Eden Theological Seminary — St. Louis, MO
I.T. Person — Jan 2018 - Present
* Helped diagnose and fix users' computer related issues
* Helped install and diagnose network equipment
* Inventoried and organized I.T. Spaces
* Setup Audio/Visual classroom to allow for presentations and remote presence of guest speakers and students
* Helped create and edit webpages in WordPress, and created forms using Caldera Forms plugin

Washington University Radiation Oncology — St. Louis, MO
Laboratory Assistant — Jun 2011-Aug 2011
* Assisted with cultivation, recording, and analysis of cell cultures
* Developed a potential webpage for the laboratory

SKILLS

C# – 1 year at work
C++ – 2 years at school
Arduino Microcontroller – 1 year, school & personal
Unity – 1 year, personal & work.
Java – 2 years, school & personal
Python – 3 years, school & personal
JavaScript & HTML – 1 year, personal
Microsoft Office Suite – 10+ years, school

PROJECTS

I wrote nearly all the scripts for the 3D mobile game SNARF! on IOS and Android, utilizing C#, Unity, and Visual Studio Community as part of a team of 4 over the course of 4 months. This includes AI pathing in a

changing environment, making a unique attack system, custom settings, fluidly translating animations based on input and game state, and integrating Unity Ads and Analytics with a fun spin-the-wheel power-up incentive. I implemented a behind-the-scenes stress test upon starting the game to hopefully determine proper quality settings so that the game doesn't slow to unplayable levels even on older hardware.

I worked on an Air Hockey playing robot over the course of 6 months in a team of 3 for my college robotics course. I focused on writing the visual processing logic in Python on a Raspberry PI to find the puck and the computer controlled striker from a webcam and calculate intercept trajectories, but also participated in planning, budgeting, buying, and assembling parts.

Over the course of 6 months I implemented a 3D ray tracer using the Phong illumination model to render 3D environments to an image based on an input file as part of my Computer Graphics 1 utilizing both C++ and Python. Shadows and translucent objects are supported, with reflections and refractions of the raycasts.

TennoTyper is a front end only website I created from scratch in raw HTML, CSS, and JavaScript that phonetically translates text into the three fictional languages from the videogame Warframe and the resulting image can then be saved. I wrote this over the course of a couple weeks, and continued to provide updates as problems were found by the community and new languages in game were translated. I created the fictional characters in Adobe Illustrator, and had to export in .png instead of .svg due to security issues with Internet Explorer. It is currently hosted on Github at https://clarvel.github.io/TennoTyper/

HexSpace is a 3D space shooter game I made for LOWREZJAM2016 (max game resolution of 64x64 pixels) over the course of a week, written in Processing, a graphical IDE for Java apps. I created the spaceship, planet, and asteroid models in Autodesk Fusion 360, sourced a free background music track, used BFXR to make simple sound effects, and programmed a parallax scrolling background starscape and two different types of AI to populate the game's factions. It is available for free on Windows, Mac, PC, and Raspberry PI through itch.io; https://clarvel.itch.io/hexspace