Joseph Mark Conwell

Education

Virginia Tech – Graduating May 2021
Blacksburg, VA
Major: **Applied Discrete Mathematics**
Minors: **Computer Science, Philosophy**

Contact

Email: jmc529@vt.edu
Phone: 610-659-0186
Portfolio: https://jmc529.github.io

Projects & Experience

EvolutionEd – Grant Funded
February 2020 – Present
Unity/C#/VueJS
A grant funded project I am leading that aims to make lab time more accessible and affordable. I designed a simulation of the eColi bacterial growth cycle subject to different conditions. The project's next stage is testing with participants and will hopefully come to a head by the end of the semester.

M3: A Music Player Web Extension – Personal Project
January 2019 – June 2019
JavaScript/HTML/CSS
A project that I used to familiarize myself with JavaScript while solving the issue of "free to play" Spotify apps. I wanted to redesign how I used Spotify to stream music, so I leveraged their API to create a custom web extension for my personal use.

RSA Implementation – Personal/School Project
May 2018-Feburary 2020
Lua/Python
An implementation of the RSA algorithm first done in LUA as a personal project then later rewritten in Python for school. The program generates pseudo-random keys and encrypts/decrypts numerical messages.

VT University Libraries – Software Developer
October 2019 - Present
C#/C++/Unity/Unreal/Python
At ARIES I create immersive XR environments in multiple programming languages and frameworks. The applications we create consist of education exhibits to athletic trainers.

Notable Projects:
Field Dependance: I implemented a VR version of the Rod and Frame test in Unity that additionally tracks the user's eye vectors for research on cybersickness.
QB Simulation: I redesigned the project to be compatible with the oculus quest, implemented fallback throw mechanics, and designed a JSON to animator system that can convert hand drawn plays to NPC actions in world.
VetMed: Implemented a modular quiz system that allows teachers to test and guide their students while the students use the application. The in-app quiz was written in C++ for Unreal and the quiz builder is a webapp written in VueJS.

Roles & Organizations

Cognent Lab – Student Researcher
January 2021 – Present
Unity/C#/MRTK2
- Undergrad research in AR software development.
- Learning Hololens2 development and UI best practices.
- Implementing a program to help train first responders in high crisis situations.

VTHacks – Webdev Lead
August 2018 – Present
VueJS/NuxtJS/Heroku/Firebase/Netlify/MongoDB
- Lead other students in web development projects utilizing multiple stacks.
- Created an entirely new front end for VTHacks8 which implements a PWA.

Skills

Skills: Unity, Unreal, XR environment development, Git, MongoDB

Languages: C#, Java, Python, C++, C, JavaScript, VueJs, Lua

Notable Coursework

Technical & Computer Science:
- Software Design, Data Structures and Algorithms, and Data and Algorithm Analysis
- Cryptography I (private key), Cryptography II (public key)
- Undergraduate Computer Science Research

Mathematics & Philosophy:
- Number Theory, Modern Algebra, and Advanced Calculus
- Math Modeling, Combinatorics, and Statistics
- Aesthetics & Modern Logic & Dev