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Wijdan Butt

Full Stack Developer

Computer Science graduate with 2 years experience in designing, building and deploying dynamic and responsive software applications. Passionate about learning new technologies, bringing ideas to life and working with dedicated teams to build efficient and robust applications suited to the user's needs. Also proficient at problem solving and critical thinking from previous experience as a game programmer.

#Technical Skills:

Javascript ES6+, C++, Unity Scripting API(C#), CSS3 / SCSS, HTML5, CSS Grid, Flexbox, ReactJS, NodeJS, npm, webpack, SemanticUI, NoSql(MongoDB,mongoose) Express, Axios, Fetch, promises, async, Git, Github, Bootstrap,PostgreSQL, SQL,Adobe Photoshop, Adobe XD

#Experience

CSS Developer: Studio Karaoke |Freelancing

Developed a desktop-first website for a local karaoke bar by incorporating a float based layout in CSS and HTML

- Incorporated responsive design principles by allowing content to easily adapt to the current viewport width
- Custom SCSS styling written with BEM naming conventions and used the 7-1 pattern for the project architecture
- Created a navigation menu with a unique styles and animations

Web Application Developer: FaceDetection |Side Project

Developed a facial recognition application where users can upload any picture and can find a face.

- Executed React front-end in ES6, with Babel, Webpack, and Node.
- Integrated with ClarifAI Face Detection API and Ajax with HTML.
- Back-end that has a RESTful API server with Express and stored user information such as username and hashed passwords securely in the database on PostgreSQL

Web Application Developer: YelpCamp |Side Project

Developed an application where users can submit a picture,name,price,location for a CampSite

- App has a back-end where I use RESTful API server with Express and created Session management with authenticated routes using Passport.js
- Incorporated Bootstrap for the front end and stored user information and campground information on MongoDB
- Ability for users to add, edit and delete comments to each post and has Data Persistence for each data uploaded

Front End Developer: Github Battle |Side Project

Created a Github Battle app where users can input github usernames and then compare different github users

- Executed React front-end in ES6, with Babel, Webpack,React-Router and Node.
- Used the Fetch API to make requests for the data needed from the Github API.

Back End Developer: Mini 3D Game Engine |Academic Project

*Created a mini 3D game engine. Used the DirectX 12 API for 3D rendering. Created in **C++***

- Incorporated 2D & 3D mathematics, interpolations, rendering, clipping, matrix transformations, graphics pipelines, lighting, materials, texturing, rasterization, shading and other computer graphics and programming knowledge to interface with Microsoft DirectX SDK.

- Implemented pixel and vertex shader techniques that can support Displacement, Normal, Shadow and Height Map which is written in High Level Shader Language(HLSL)
- Built graphics software through interfacing, integrating and linking with libraries within the DirectX SDK environment and interface with low-level subsystems within the framework
- Implemented Post Processing effects
- Implemented Model Importing for 3D models
- Implemented a Verlet integrated particle system
- Implemented an animation system including keyframe/skeleton animation playback, animation evaluation trees, complex blending and skinning techniques

Front & Back End Developer: HookShot Hero |Academic Project

*A first person multiplayer racing game with the addition of using a grappling hook across 6 uniquely varied maps. Created in **Unity***

- Worked with and managed a team of programmers, designers and modellers
- Had the role of the project manager for the team
- Implemented some of the animations, movement, audio system,checkpoint, trail customization, UI and some of the physics of the grappling hook
- Used SCRUM methodology to manage the project. In charge of managing the capacity and milestones planning , work assignment and risk assessment

Back End Developer: Marching Cubes |Academic Project

*Created an implementation of the Marching Cubes algorithm which allows for real-time mesh deformation which allows for adding or subtracting meshes. Created in **Unity***

- Constructed a 3D voxel grid
- Partitioned Voxel map into chunks for optimization
- Conversion from Voxel Map to a triangle mesh is done through isosurface extraction and finds the isovalue.
- Processing each cell in a voxel map first independently of the others.
- For each cell, determine what part of the isosurface passes through the cell and generates a triangulation. Result from all cells are combined to form the complete isosurface
- Checks the state of the 8 corners in a cell for all possible 256 distinct cases
- Filling the gap cells along the different dimensions
- Added support for editing the voxels such as filling and emptying

Front & Back End Developer: Marching Cubes |Academic Project

*Created a procedurally generated voxel world akin to Minecraft. Created in **Unity***

- Creating a structure to help optimize rendering for the world. Done by using chunks, which are a selection of grouped up blocks, which remove interior polygons. Comparisons to the neighbouring blocks help with this.
- Using a 16x16 texture atlas which has all the individual textures placed on a grid in a single file
- Using Fractal Brownian Motion to procedurally generate terrain and textures
- Saving and loading chunks by storing the data that needs to be preserved and converting it into a stream of bytes ready for writing to a file
- Spawning and deleting chunks as the player moves depending on the players position and their relative radius
- Ability for players to spawn 5 different block types in the world and for the player to be able to hit blocks and destroy them.

Back End Developer: Various VR Mini Games |Academic Project

Helped create 3 VR games for different VR headsets in Unity(C#)

- Made a simple VR shooter mini game for the Google Cardboard
- Made a simple VR soccer mini game for the Oculus Rift
- Made a simple flying VR mini game for the HTC Vive

#Education

LaSalle College Vancouver/ Bachelor of Science in Game Programming January 2013- December 2017 : Vancouver, BC

Degree program that has a strong applied focus in programming, mathematics, physics, game development, game design and teamwork. Mainly focusing on C++ and subjects such as OOP, templates, data structures and algorithms, databases, network, AI, Physics, Calculus, Linear Algebra, Graphics programming and more