Jacqueline Allex

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SKILLS

Programming : C++, Python, Javascript, ReactJS, OpenGL, GLSL, C#, Java, SQL, Git, Agile
Software Proficiencies : Maya, Blender, Houdini, Nuke, Unity, UE4

EXPERIENCE

Human Movement Neuroscience Lab **Boston, MA**
Computer Graphics Software Engineer Intern (Part time), August 2020 - Present
VR | AR | Motion Capture Technical Engineer Co-op January - August 2020

- Constructed skeleton and created full-body human animations using Python, Blender's API, and parsed data collected through marker and markerless motion capture sessions.
- Used computer vision and neural networks to auto-detect parts of human body across frames and other objects in rgb video and perform 3D reconstruction for markerless mocap system.
- Automated systems to clean up large amounts of mocap data - for example an automated system that uses camera frustum information, far and near clipping planes, 3D marker data, and RGB video pixel locations of markers to auto-label the unlabeled marker trajectories.
- Calculate vectors and matrices related to position and rotation, quaternions in 3D space, perform calibrations, project rays, manipulate cameras and rigid bodies.

Bare Tree Media **Boston, MA**
Computer Graphics Technical Director (Freelance) March 2020 - Present

- Use Javascript to build components of AR filters such as custom shaders, particle effects, 3D and 2D animations, user interactivity, games, lighting, cameras, and more for Instagram, Facebook, and Snapchat.

Bank of America **Jersey City, NJ**
Global Technology Analyst Intern June - August 2019

- Used ReactJS and NodeJS to design and build 10+ features on the front-end and API.
- Collaborated on an Agile team of experienced developers and designers to create new application approaching UAT, Distribute, which facilitates data transfer in Credit Risk.
- Wrote extensive unit testing including mocking, participated in code review.

EDUCATION

Northeastern University, Khoury College of Computer Sciences **Boston, MA**
Candidate for Bachelor of Science in Computer Science and Media Arts May 2022
GPA: **3.75** / 4.0 (Dean's List Placement for Academic Excellence)
Coursework: Object Oriented Programming, Animation, Algorithms, Linear Algebra, Discrete Structures
Activities: Girls Who Code, NU Women in Technology, Animation Club

PROJECTS

Raytracer

- Renders realistic images through ray tracing techniques on 3D scenes.
- Used C++ to implement space-time raytracing, motion blur, AABBs, BVH volumes, image textures, perlin noise, Vector3 math operations, rays, shaders, lights, geometry in a scene, normal determination, antialiasing, materials with refraction and reflection, and cameras

Physics Engine

- A project in progress, using C++ to create a realistic depiction of certain physical systems including rigid body dynamics, soft body dynamics, and fluid dynamics
- Implement simulation, collision detection, and collision response for various types of matter