Ruchi Bhatwal

Software Engineer

ruchib.com
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Skills

Languages
C / C++
HLSL
GLSL
C#
Javascript

API
Qt
Direct3D 11
ImGui
OpenGL
FMOD Studio

Software
Visual Studio
Perforce
Git
SVN
AWS
RenderDoc
Doxygen
Dr. Memory
Valgrind
Maya
Unity

Math
Linear Algebra
Calculus
Discrete Math
Kinematics

OS
Windows
GNU/Linux

Work Experience

Insomniac Games

Core-Infrastructure Programming Intern **May 2019 – Aug 2019**

- Worked with Insomniac's proprietary tools and engine and resolved Jira tasks related to adding features to their editors and cross-platform game engine.
- Learned Model/View architecture and implemented editor features using Qt. Made UI mockups for the features added to the engine and made sure that the end users approved them.
- Created a new asset type in the engine called "breakables" that will be used in Insomniac's games. This includes creating a specific breakable asset editor, breakable asset builder and breakable asset and component that is used during game engine's runtime code.
- Communicated with co-workers from various departments and documented the task progress so that there was a streamlined feedback process.

DigiPen Institute of Technology

Computer Science TA **Sep 2017 – Present**

- TA for Introduction to C/C++, Game Implementation Techniques, and Game Physics Programming.
- Tutored one-on-one for students to help them understand core C/C++ concepts answered questions by debugging their code.

DigiPen Game Projects

Programmer **Sept 2017 – May 2019**

Cat's Cradle (3D platformer) *Team size: 9, Multidisciplinary*

- Implemented light components that illuminated the world using Phong Illumination model.
- Implemented multiple render targets using DirectX 11 to support deferred shading.
- Generated shadow maps to create real time shadows for point, direction and spotlights.
- Implemented instancing and used geometry shaders to support various particle systems.

Programmer **Aug 2017 – May 2018**

Field Punk (2D platformer) | Showcased at PAX West 2018 *Team size: 11, Multidisciplinary*

- Created an impulse-based collision resolution system and programmed a simulation of magnetic effects on convex objects to support the game's main mechanic.
- Made physics rigid bodies and colliders editable using ImGui so that designers and artists can easily add game content.
- Constructed a physics-based particle system to allow the artists to incorporate various VFX.
- Added support for FMOD Studio and created editor tools to allow flexibility for sound designers.

Activities and Groups

- **Girls Who Code,** Panelist, June 2018
- **DigiPen Student Ambassador,** 2016 - 2020
- **Seattle Women in Games and Technology**, Member

Education

B.Sc. in Computer Science in Real Time Interactive Simulation **Expected 2020**

DigiPen Institute of Technology
Honors and Awards: Dean's Honor List
GPA: 3.56