

Satchit Subramanian

Game Programmer

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SKILLS Programming Engines Tools	C++, C, C#, 68000 Assembly, Java, Python Unity 2018, Unreal Engine 4 Visual Studio, Perforce, Git, BitBucket, Photoshop	EDUCATION MS, Interactive Entertainment BE, Computer Science and Engineering	University of Central Florida (FIEA) Aug 2017 – Dec 2018 Anna University (SSN College) Jun 2013 - May 2017
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PROJECTS

Real Time Dynamic Destruction | FIEA – May 2018 - Present - Solo Programmer (UE4/C++)

- Pre-computed Voronoi decompositions using Delaunay tetrahedralization
- Pre-computed splitting of mesh into smaller pieces using artist-supplied points
- Local application of fracture patterns to the mesh convexes based on impact location at run-time

Hypervital | FIEA – Feb 2018 – Present - Programmer (UE4/C++)

- Co-ordinated with a multi-disciplinary team of 18 and used, authored, modified and refactored code in a pre-existing foreign codebase
- Implemented organically reshaping puddles with meatball-based mesh generation
- Performed metrics analysis with in-engine visualizations – heatmap, timeline diagram for location, key-presses, death and explosion
- Profiled the game-loop and enumerated and performed optimizations for better performance while retaining functionality

Project Dragon | FIEA – Dec 2017 – Feb 2018 - Lead Programmer (UE4/C++)

- Set up code-quality guidelines and architecture; coordinated 5 programmers, interfaced with leads for scoping, sprint planning and design
- Implemented the character controller, dynamic camera, projectiles, damage, UI systems and worked on optimization and debugging

Data-Driven Game Engine | FIEA – Jan 2018 – Apr 2018 - Solo Programmer (C++/OpenGL/DirectX)

- Built an extensible data-driven game engine in C++, using C++ 11 language features, which allowed Json scripting
- Implemented a multi-threaded event system and a system for encoding behavior via data
- Wrote an expression parser to allow expressions in Json scripts, including arithmetic, functions and symbols in scripts
- Employed various design patterns – Chain of responsibility, Factory, Observer, Command, Action etc.

Splatoon 2D | FIEA – November 2017 – Programmer (C++/OpenGL)

- Developed a four-player free-for-all Splatoon clone in C++ with another programmer using a custom framework based on OpenGL rendering
- Architected a grid-based system for painting, a sprite renderer, animation programming, UI, movement, damage etc.

Treasures in Time | FIEA – Jan 2018 – Apr 2018 - Lead Programmer (UE4/C++)

- Coordinated with a Judaic studies subject matter expert and a multi-disciplinary team of 12 to build a top-down point-and-click adventure game
- Crafted an inventory system, along with various mini games
- Created a robust, object-oriented dialog and conversation system with provisions for avatars

Dynamic 2D Shadows | Personal Project - Solo Programmer (Unity/C#)

- Generated 2D shadow/light meshes based on collider information, using an optimized algorithm that minimized ray-casts and object lookups
- Created multiple types of extensible light sources – circular, arc-based, collider-confined with support for movement, rotation, overlapping

Terrain Generation | Personal Project - Solo Programmer (Unity/C#)

- Implemented improved 3D Perlin noise in Unity/ C# using Ken Perlin's paper
- Scripted a configurable terrain mesh generator with seed, frequency, octaves, lacunarity, persistence
- Animated water by moving through the layers of 3D noise and deforming the mesh

WORK EXPERIENCE

Nanoforge | Canada (remote) – Jan 2017 – May 2017 – Programmer (Unity/C#)

- Scripted a radial UI menu with sub-menus, linear sliders, toggles, and integrated game mechanics with the menu
- Integrated OSVR for VR capabilities with custom VR overlay shaders
- Ported existing input system to Rewired Input and implemented gamepad support

Kaleidozone | Chennai – Apr 2016 – May 2016 – Programmer (Unity/C#)

- Created a VR app using Oculus and Leap Motion SDKs with hand-gestures for model interactions and diegetic UI

Metavrse | Chennai – Nov 2015 – Feb 2016 - Solo Programmer (Internship) (Unity/C# & UE4/C++)

- Worked with Vuforia, Oculus, Leap Motion SDKs to build 3 client-ready AR/VR apps and 2 proof-of-concept apps
- Performed lighting, shader, memory and material optimizations in existing products and fixed app-crashes on existing products