WAYNE WU

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HIGHLIGHTS

Languages: Python, C++, C#, Java, JavaScript, Matlab
Concepts: Data Structures, Algorithms, OOP, Concurrency
Courses: Computer Graphics, Computational Physics, UI/UX

Graphics: OpenGL/WebGL, GLSL, VEX
3D Animation: Houdini, Blender, Maya
Game Engines: Unity, Frostbite

PROFESSIONAL EXPERIENCES

3D Software Developer — Side Effects Software — Toronto, ON — Fall 2017
- Developed a FACS-based facial auto rigging system for Houdini H17, adaptable to bones, blend shapes and mocap driven animations, while easily transferable to other characters.
- Designed the rigging workflow with new nodal interfaces (HDA) and implemented 3D geometry and rigging utilities in Python, VEX and C++ to support the auto-rigging processes.
- Redesigned Houdini AutoRigs' for H17 to reduce drastically the development time of each module, and allow for users to define custom rigging modules through Python.

Technical Director — Tangent Animation — Toronto, ON — Summer 2017
- Extended functionalities in Blender using Python such as custom outliner, dynamic constraint tools, and various character utilities, all which have greatly sped up the rigging and animation workflow.
- Developed a Blender-integrated character picker using PyOpenGL, tailored for large production with many varieties of character, and designed for fast controls selection and keyframing.
- Worked closely with CG supervisors and artists to tackle on software bottlenecks across the pipeline.

Associate Software Developer — Electronic Arts — Vancouver, BC — Winter 2017
- Supported PvZ: Garden Warfare 2's live service team with new in-game features and workflow improvements within Frostbite (engine) and Blaze (server), both which were heavily C++ focused.
- Developed a collection of automation toolsets in C# that allowed direct access and modification of the live service game components for QA and testing purposes.

Software Engineering Intern — Yahoo Inc. — Taipei, Taiwan — Summer 2016
- Led the development of a mobile solution using Android (Java) that improved Yahoo e-commerce app's search result using smart keyword filtering with innovated user interface.
- Open sourced Yahoo's internal toolset, Parsec, used to accelerate the process of building Java web services by handling the grunt work using Gradle and RDL. (https://github.com/yahoo/parsec)

PERSONAL PROJECTS

Shallow Water — WebGL, Simulation — https://wayne-wu.github.io/shallow-water — Fall 2017
- Simulated the shallow water equation using WebGL with realistic rendering.
- Implemented ray marching algorithms inside the shaders (GLSL) for most rendering, including the height field (with proper refraction across surfaces), and caustics under the water.
- Added all support for camera movement and web interactions in JavaScript.

Black Strider — Unity Game — https://wayne-wu.github.io/blackstrider — Fall 2016
- Created an action runner game in Unity using open-sourced sprites and built-in Unity assets, from level design, animation, gameplay programming to HUDs.
- Implemented code in C# to support the game logic such as terrain generations, state machine behaviours for animation, character controls and enemy AI.

Neverland — Messenger BOT — www.github.com/wayne-wu/yneverland — Summer 2016
- Created an online matchmaking system using Facebook Messenger's API and developed a chat BOT that connected different Facebook profiles together based on preferences.
- Implemented the matchmaking logic in Python using Django as the database handler, powered by Heroku

EDUCATION

University of Waterloo, Waterloo, Ontario
Bachelor of Applied Science, Honours Systems Design Engineering, 2019

- Engineering Faculty/Staff Upper Year Scholarship
- Dean's Honour List 2015-2017
- President's Scholarship 2014-2015
- **GPA: 3.9**

INTERESTS

- Computer Graphics
- 3D Animation & VFX
- Physical Simulation
- Film & Game Making
- Product Design
- Bartending