

WAYNE WU

✉ t73wu@edu.uwaterloo.ca

in www.linkedin.com/in/wayne-wu

github www.github.com/wayne-wu

HIGHLIGHTS

Languages: Python, C++, C#, Java, JavaScript, Matlab
Concepts: Data Structures, Algorithms, OOP, Concurrency
Courses: Systems Modeling, Numerical Methods, UI/UX

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

PROFESSIONAL EXPERIENCE

3D Software Developer Side Effects Software Toronto, ON Fall 2017

- Developed an advanced **full-facial auto rigging** system for **Houdini H17** using **Python** and **VEX**, adaptable to both bones and blend shapes driven animations, while easily transferable to other characters.
- Integrated computer vision libraries for **facial landmark detection** used as part of the auto-rigging process as well as for **mapping motion captured data** to the facial rig.
- Redesigned Houdini AutoRigs' for H17 to reduce drastically the development time for 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** and **C++** 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 variety of characters, and designed optimally for rapid controls-driven animation.
- 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 features and workflow improvements in **Frostbite** and **Blaze** (game 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 intern project in the development of a **mobile** solution using **Android (Java)** that improved Yahoo **e-commerce app**'s search functionalities with innovative user interactions.
- 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** through user interaction using **JavaScript**.

Black Strider Unity Game www.github.com/wayne-wu/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 messenger **BOT** that connects 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