

# WAYNE WU

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## HIGHLIGHTS

- **3D Graphics:** FX, Simulation, Rendering, Character
- **Design:** Workflow, UI & UX, Pipeline, Rapid Prototype
- **Software:** HCL, Computer Graphics, Machine Learning
- **Interests:** Cinematography, Bartending, Travel

## SKILLS

- **Tools:** Houdini, USD, Unity, Blender, Maya, Nuke, Processing, Arduino, Qt, Linux
- **Languages:** C++, Python, GLSL, VEX, C#, Java, MATLAB, JavaScript, HTML

## PROFESSIONAL EXPERIENCE

### Production Technology Technical Director, Blue Sky Studios

August 2019 - Present

- Architected the framework of Conduit in Houdini, with PDG integration and simplified pipeline IO channel, enabling technical artists to create scalable multi-shot and multi-asset setups in Houdini.
- Designed new USD workflows and techniques in Houdini for handling different FX body types, including generation, composition, wedging and rendering with RenderMan, all with specialized USD tools.

### 3D Software Developer (Co-op), SideFX

Fall 2017 & Summer 2018

- Introduced the material-based fracturing toolkit for Houdini, using physics-based fracturing techniques, and a modularized RBD workflow to efficiently manage and art-direct heterogeneous destruction setups.
- Developed a FACS-based facial auto rigging system for Houdini, adaptable to locators, blend shapes and motion-capture driven animations, while easily transferable to other characters.

### Technical Director, Tangent Animation

Fall 2015 & Summer 2017

- Implemented a Blender character GUI system using PyOpenGL allowing artists to create templated character pickers with flexible viewport-based interactions for animation.
- Improved the rigging, layout and animation workflows by building artist-friendly Blender addons such as character picker, custom scene outliner, dynamic constraint tools, and various character/rigging utilities.

### Associate Software Developer (Co-op), Electronic Arts

Winter 2017

- Designed and implemented new algorithms in the game engine, Frostbite, for Plants vs. Zombies' live service user data collection, licensing management and monetization strategies.

## PERSONAL & ACADEMIC PROJECTS

### Circles, Web Application

September 2018 - April 2019

- Designed a web application to facilitate remote social interactions between older adults at risk of isolation.
- Enforced participatory and user-centric design including interviewing older adults for design requirements and performing user testing with quantitated feedback for iterating the design.

### Computational Studies, MATLAB

Winter 2018, Fall 2018

- Implemented a mass-spring cloth solver using numerical integrations with custom correction model.
- Implemented and evaluated various numerical optimization techniques to solve Inverse Kinematic problems.

### Shallow Water, WebGL

Fall 2017

- Simulated a modified shallow water model using GPGPU in WebGL with real-time user interactions.
- Implemented ray marching algorithms in GLSL for rendering water refraction and caustics.

## EDUCATION

### University of Waterloo, Waterloo, Ontario

GPA: 3.9/4.0

### Bachelor of Applied Science (Honors), Systems Design Engineering, 2019

- Graduated with Distinction - Dean's Honors List, 2019
- Exchange student at the National University of Singapore, 2018
- W.W King Exchange Fellowship, 2018
- Engineering Faculty/Staff Upper Year Scholarship, 2018
- President's Scholarship, 2015

## VOLUNTEER

- SIGGRAPH 2018, 2019

## LANGUAGES

- English (Native)
- Chinese (Native)
- French (Professional)
- Japanese (Beginner)