WAYNE WU

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HIGHLIGHTS

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

SKILLS

- **Tools**: Houdini, Unity, Blender, Maya, USD, 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 **integration of Conduit in Houdini and PDG**, simplifying all I/O connections to Conduit and enable technical artists to easily create **scalable multi-product automations** in Houdini.
- Established **new FX workflows and techniques** for handling **different FX body types in USD**, streamlining the geometry processing from **generation, caching, wedging to rendering with RenderMan**.
- Designed **specialized USD tools in Houdini** and Python for artists to directly **author advanced composition arcs in context of asset, scene or shot** products as defined by the Conduit USD structure.

3D Software Developer (Co-op), SideFX   Fall 2017, Summer 2018

- Introduced the **material-based fracturing toolkit** for Houdini H17, using **new fracturing techniques** that enable artists to realistically fracture concrete, glass or wood based on **researched fractography**.
- **Redesigned the RBD workflow**, using a **modularized structure**, allowing artists to **efficiently manage constraints** for heterogenous setups, and **art direct destruction** using painting mechanisms.
- Developed a **FACS-based facial auto rigging system** for Houdini H17, **adaptable to bones, blend shapes and motion-capture driven animations**, while easily transferable to other characters.

Technical Director, Tangent Animation   Fall 2015, Summer 2017

- 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.

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
- Implemented **ray marching algorithms in GLSL** for rendering **water refraction and caustics**.
- Added all support for camera movement and **real-time interactions** in JavaScript.

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**
- 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)