WAYNE WU

TECHNOLOGY X GRAPHICS X ART

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HIGHLIGHTS

- Graphics: 3D Animation, VFX, Simulation, Rendering
- Engineering: Computational Physics, Digital Systems
- Design: UI/UX, Agile Development, Rapid Prototyping
- Software: OOP, Mobile, Web, Machine Intelligence

SKILLS

- Tools: Houdini, Unity, Blender, Maya, Qt, Linux, Git, Processing, Photoshop
- Languages: C++, Python, GLSL, VEX, C#, Java, MATLAB, JavaScript, HTML

PROFESSIONAL EXPERIENCES

3D Software Developer, SideFX — Fall 2017, Summer 2018

- Architected a material-based pre-fracturing toolkit for Houdini H17, using advanced fracturing techniques that enable artists to realistically fracture geometries based on concrete, glass or wood.
- Redesigned the simulation 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

- Developed a Blender-integrated character GUI using PyOpenGL, allowing riggers to create templated character pickers, and animators to animate using viewport-based interactions.
- Improved the rigging, layout and animation workflow by building Blender tools such as custom scene outliner, dynamic constraint tools, and various character/rigging utilities.

Associate Software Developer, Electronic Arts — Winter 2017

- Integrated new in-game features and user data collection tools for Plants vs. Zombies' live service team, along with systematic improvements to the game engine (Frostbite) and server.

PERSONAL / ACADEMIC PROJECTS

Cloth Simulation, MATLAB, wuwayne.com/clothsim — Winter 2018

- Implemented cloth simulation in MATLAB to examine computational techniques used in CG.
- Explored various numerical methods used to solve the system including both explicit and implicit numerical integrations, as well as techniques to validate and approximate the model.

Shallow Water, WebGL, wuwayne.com/shallowwater — Fall 2017

- Simulated a modified shallow water model using GPGPU in WebGL.
- Implemented ray marching algorithms for rendering with refraction and caustics of water.
- Added all support for camera movement and web interactions in JavaScript.

Sketchbook, OpenGL, wuwayne.com/sketchbook — Winter 2018

- Crafted 2D/3D renders with OpenGL applying various rendering techniques.
- Voted as the best drawings in class in all competitive opportunities, receiving 100% in grades.

EDUCATION

University of Waterloo, Waterloo, Ontario — GPA: 3.9

Bachelor of Applied Science, **Honours Systems Design Engineering**, 2019

- Exchange student at the National University of Singapore 2018
- W.W King Exchange Fellowship 2018
- Engineering Faculty/Staff Upper Year Scholarship 2018
- Dean's Honour List 2015-2017
- President's Scholarship 2015

REFERENCES

- Mike Lyndon – mikel@sidefx.com
- Brian Foster – brian.foster@tangent-animation.com

VOLUNTEER

- SIGGRAPH 2018 SV

LANGUAGES

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

HOBBIES

- Bartending
- Cinematography