

HIGHLIGHTS

- **Graphics:** VFX, 3D Animation, Immersive Technology
- **Engineering:** Computational Physics, Digital Systems
- **Design:** UI/UX, Product Management, Agile Thinking
- **Software:** OOP, Mobile, Web, Machine Intelligence

SKILLS

- **Tools:** Houdini, Blender, Maya, Unity, After Effects, OpenGL, Qt, Linux, Git
- **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, enabling artists to [realistically fracture geometries](#) based on concrete, glass or wood.
- [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

- Developed a [Blender-integrated character GUI](#), using [PyOpenGL and UV Editor](#), 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 the [shallow water equations](#) model using [GPGPU in WebGL](#).
- Implemented [ray marching algorithms](#) for rendering with [refraction and caustics](#) from water.
- Added all support for [camera movement](#) and [web interactions](#) in **JavaScript**.

Sketchbook, OpenGL, [wuwayne.com/sketchbook](#)

Winter 2018

- Crafted various [renders](#) and [drawings using OpenGL](#) in both **2D** and **3D**.
- 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