# SUSAN XIE

PROJECTS: **https://suxie.github.io**
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## EDUCATION

**HIGH TECHNOLOGY HIGH SCHOOL** | September 2013 – June 2017

**UNIVERSITY OF PENNSYLVANIA** | August 2017 - May 2021
**School of Engineering and Applied Science Candidate for BSE,** Digital Media Design
**Candidate for MSE,** Computer Graphics and Game Technology

## EXPERIENCE

**HI-REZ STUDIOS TOOLS INTERN ▪ FIRST WATCH GAMES** | June 2020 — August 2020
I worked on the Tools team for the studio behind Rogue Company, which involved writing tools in Python for other departments within First Watch Games. I worked on the following projects:
- UI and backend for a standalone tool that stores command lines for gameplay engineers
- SpringIK component for a rigging tool in Maya
- UI improvements to a batch script tool in Maya

**CIT 593 / CIS 240 - HEAD TEACHING ASSISTANT** | August 2019 — present
Intro to Computing Systems is an introductory computer architecture class covering content from transistors and binary to basic operating systems, compilers, assembly language, and C.
- hold office hours and grade homeworks
- lead recitation once a week (CIT 593)

**DONOVAN DMD SUMMER INTERN** | June 2019 — July 2019
This is a research grant provided to two Digital Media Design students every year. I worked in the SIG lab (computer graphics lab) on a crowd simulation project
- worked on environments in Unreal Game Engine (landscapes) and buildings (Maya)
- created crowd simulations in Houdini

**PENNAPPS CO-HEAD OF CREATIVE** | April 2018 — present
PennApps is the nation's oldest and largest hackathon, with thousands of attendees from around the world. I work as one of two directors in charge of creating material for the event. I started as a committee member in 2018 and became co-head in 2019.
- create themed flyers, swag, and more for attendees and sponsors
- manage social media, take photos
- co-head for PennApps XX and XXI branding, built website: **https://2019f.pennapps.com/**

**PRECISE CENTER WEB AND GRAPHIC DESIGNER** | December 2018– January 2020
I worked on a website for the F1Tenth competition, an autonomous racing event, and the website for the 2019 PRECISE Industry Day at Penn
- designed overall look and colors of both sites, rebranded F1Tenth
- used HTML and CSS to build the sites
- **http://f1tenth.org** and **https://precise-industry-day.seas.upenn.edu/2019/**

## SKILLS

**PROGRAMMING:**
Python, C++, C, C#, Java,
HTML / CSS / JavaScript

**SOFTWARE:**
Maya / Arnold, Unreal Engine, Unity Game Engine, Houdini,
ZBrush, Substance Painter, MotionBuilder, Adobe Suite

**RELEVANT KNOWLEDGE:**
Programming: *Computer Animation, Computer Graphics, Game Design, Advanced Rendering, Data Structures, Algorithms, Computer Architecture, Software Design and Development*
Art: *3D Modeling, Simulation, Graphic Design, Digital Illustration, Traditional Art*
Current coursework: *Physically-Based Animation, Digital Figure Modeling*

## PROJECTS

**MINI MINECRAFT** ▪ C++ (OpenGL, GLSL, Qt) — underwater themed Minecraft
- built first person physics-based game engine with walking, flying, and swimming
- implemented GUI and item bar
- responsible for sound and post-process shading effects

**MINI MAYA** ▪ C++ (OpenGL, GLSL, Qt)
- mesh editor & obj importer that supports joints and skinning built on half-edge data structure
- implemented triangulation, subdivision, skinning

**CLiME** ▪ Python (PyQt)
- tool for storing and executing commandlines
- loads library from JSON & allows custom args
- displays and filters output by regex

**PATHTRACER** ▪ C++ (OpenGL, GLSL, Qt)
- naive Monte Carlo integration ▪ global illumination ▪ multiple importance sampling ▪ constructive solid geometry ▪ light sources: area lights, point lights, spotlights ▪ materials: lambertian, specular, microfacet