# SUSAN XIE

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

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

## EXPERIENCE

**PIXAR ANIMATION STUDIOS RENDER TECHNICAL DIRECTOR** | Jan 2023 - May 2024
I am currently working as a Render TD at Pixar. I was on the Dailies and Rendering team on Elio (unreleased), and I was a sequence owner for 3 sequences on Inside Out 2 on the Dailies, Lightspeed, and Rendering team. This was essentially pipeline, fix, QC, and optimization work:

- Dailies: ran and owned sequences in front-facing director reviews, pipeline and farm management
- Rendering: shot QC work before delivery of final frames, primarily Nuke and Katana work
- Lightspeed: render optimization, noise, and render artifact debugging
- development work on studio dailies rendering system and studio final rendering pipeline

I also spent some time in Art Lab, a studio-sponsored space to work on various lookdev projects:

- experimented with watercolor stylization using albedo and edge detection in Nuke
- implemented algorithm for pigment-based mixing of colors in Houdini (VEX) and Nuke (Blinkscript)

**SONY PICTURES IMAGEWORKS ASSOCIATE TECHNICAL DIRECTOR** | Jun 2021 - Dec 2022
I was a Lighting and Look of Picture TD on the *Spiderman: Across the Spiderverse* sequel. My everyday duties involved tool development, artist support, and render optimizations. Some of the projects I have worked on include:

- DeepID system to capture collections and attributes from Katana to be accessed in Nuke
- features for a Blinkscript tool that paints strokes: vary stroke transform using noise maps, controls to sort and isolate strokes by luminance, "bomb" strokes in 3D on to a 2D render
- auto-render tool for motion graphics: generates cheap render with UV projection data + creates Nuke file
- created a set of standard render optimizations for setting up vehicle headlights

**HI-REZ STUDIOS TOOLS INTERN ▪ FIRST WATCH GAMES** | Jun 2020 — Aug 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 creates and executes cmds using user inputs to stored cmds
- SpringIK component for a rigging tool in Maya
- UI improvements to a batch script tool in Maya

## SKILLS

**PROGRAMMING:**
Python, PyQt, OpenCue, C++ / C, BlinkScript (Nuke), Lua (Katana), VEX (Houdini)

**SOFTWARE:**
Katana, Nuke, Arnold, Renderman, Presto Maya, Unreal, Unity, Houdini, Adobe Suite

**RELEVANT KNOWLEDGE:**
Programming: *Computer Graphics, Computer Animation / Physically Based Animation, Game Design, Physically-Based Rendering, Computer Architecture*
Art: *3D Modeling, Lighting, Compositing, Shading*

## PROJECTS

**MINI MINECRAFT ▪** C++ (OpenGL, GLSL, Qt) — underwater themed Minecraft

- built first person physics-based game engine with walking, flying, and swimming
- implemented GUI, item bar, 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

**PIGMENT MIXING ▪** VEX (Houdini), Blinkscript (Nuke)

- implementation of pigment-based color-mixing algorithm for production software
- supports opacity as pigment weights for blending

**DEEPID COLLECTION SYSTEM ▪** Python, PyQT, Katana, Nuke
implementation of selectable Katana collections from Nuke DeepIDs

- Nuke script and gizmo that appends data to deep with UI for artists to select from deep collections
- script and macro in Katana that launches render job to cook katana scenegraph collections into JSON file

**MONTE CARLO PATHTRACER ▪** C++ (OpenGL, GLSL, Qt)

- supports global illumination, multiple importance sampling, constructive solid geometry
- lights: area lights, point lights, spotlights
- materials: lambert, blinn-phuong, microfacets