JEN HOANG

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EDUCATION

The University of California, Berkeley

B.A in Computer Science — Expected May 2022

Relevant Coursework — GPA: 3.52

Computer Graphics & Imaging, Advanced Digital Animation (in progress), Operating Systems and System Programming (in progress), Structure and Interpretation of Computer Programs, Data Structures, Designing Information Devices & Systems, Machine Structures, Discrete Math & Probability, Efficient Algorithms & Intractable Problems,

PROFESSIONAL EXPERIENCE

Graphics Software Intern | C++, OpenGL, Python — June 2020 - August 2020

syGlass: VR for Scientific Microscopy

- Independently designed the interface and built functionality for a Transfer Function that dynamically creates custom textures
- Created a physics-based particle simulation for a user-interactive VR confetti gun
- Implemented GPU downsampling to improve the speed and efficiency of 3D project creation
- Wrote Python scripts to generate licenses/license keys and to fetch data from AWS S3 Storage Buckets

Software Project Lead, Software Developer — September 2019 - Jan 2021

Blueprint: Tech for Social Good

- Lead a team of developers to build a PWA that facilitates the operation of mini solar-grid systems in remote Myanmar villages
- Defined new processes and tools best suited for the needs of our project through research, outreach, and collaboration
- Developed a mobile app that aids refugees with job attainment and integration into the coffee industry (See 1951 Coffee below)

3D Modeling and Animation Project Director/Manager — September 2018 - present

UCBUGG (UC Berkeley Undergraduate Graphics Group)

- Create 3D animated shorts through extensive use of design software (Autodesk Maya, Houdini, After Effects, Substance Painter)
- Construct semester-long work timelines, delegate tasks, coordinate meetings, and write stories
- Teach students how to navigate the 3D animation pipeline by sculpting, shading/texturing, rigging, and animating 3D models

PROJECTS

PintOS Operating System | C — March 2021

- Course project involving the extension of a simple OS framework for the x86 instruction set architecture (called PintOS)
- Designed and implemented priority thread scheduling, process syscalls, file systems, and memory allocation from scratch

Emissive Heat Simulation | C++ — May 2020

- Render realistic physics-based representations of heated metals, considering energy absorbance and reflectance properties
- Computed the spectral radiance of blackbody objects to combine with metal reflectance inputs, producing accurate glows
- Configured a linear volumetric temperature map by interpolating temperature values in 3D space

1951 Coffee Company Barista Training App | React Native, Typescript — May 2020

- Implemented features providing access to community messaging, job postings, upcoming events, and barista guides
- Constructed the initial front-end components for three of five total screens, including loading state and transition UI animations
- Established the data organization and relational information storage through Airtable
- Transcribed the full documentation for admin and user handoff

Mesh Edit | C++ — March 2020

- Built a mesh editor that supported user-edits of COLLADA meshes, implemented through the half-edge data structure
- Modeled smooth and infinitely scalable Bezier curves and surfaces using de Casteljau's Algorithm
- Performed Phong interpolation to compute area-weighted vertex normals across triangles, improving smooth surface shading
- Developed an upsampling algorithm that nicely interpolated original mesh vertices to perform loop subdivision

SKILLS

Programming Languages: Proficient: C++, C, Python, Java, TypeScript, HTML, CSS | Experienced: C#, OpenGL
Libraries and Frameworks: Numpy, JUnit Testing, React Native | **Tools:** IntelliJ, Airtable, Git, Jupyter Notebook
Design: Adobe Creative Cloud (Photoshop, Lightroom, Illustrator), Autodesk Maya, Renderman, Substance Painter, Houdini