Kevin Chen

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EDUCATION

Yale University New Haven, CT

B.S. Computer Science, GPA 4.0 Aug 2019 – May 2023

Coursework Data Structures, Algorithms, Systems Programming, Operating Systems, Computer Graphics, Discrete Math, Linear Algebra & Matrix Theory.

Community VP, Design at Yale; Board, Yale Computer Society.

EXPERIENCE

Meta Reality Labs Burlingame, CA

Software Engineer Intern May 2022 – Aug 2022

- Worked on the SLAM tracking and spatial mapping team for the Oculus line of 6DOF headsets.
- Updated spatial map storage to improve the scalability of the SLAM stack in Meta's *Presence Platform*.
- Used C++, adb debugging.

Facebook Remote

Software Engineer Intern Jun 2021 – Aug 2021

- Designed & developed scheduler service to rebalance Twine jobs and containers for stateful services. Improved fault tolerance and machine utilization; preliminary data shows up to 40k machines freed.
- *Twine* is Facebook's cluster management system used to deploy and manage applications.
- Used Python, Thrift, and Twine scheduler API to perform asynchronous task moves on regional jobs.

Yale Peabody Museum New Haven, CT

Software Engineer Jul 2020 – May 2021

- Worked on COPISClient, a desktop app which controls a multi-gantry photogrammetry imaging system.
- Implemented tool path generation, OBJ model loading, and scene object picking. Used Canon EDSDK API.
- Integrated programmable OpenGL pipeline with shaders, reduced frame render times by >80%.
- Used Python, C++, OpenGL, GLM, GLSL. *Project link*.

Software Developer Intern Jun 2020 – Jul 2020

- Redesigned UI, refactored entire directory structure and 3D viewport. Implemented arcball navigation.
- Used Python, wx, OpenGL, C++.

PROJECTS

OS Dev

- **2021.** Implemented memory-mapped VGA 640*480 16-color video mode and syscalls in mCertiKOS. Added keyboard interaction and ability to playback GIFs. Used C, Assembly. *Demo video link*.

Graphics

- **2022.** Implemented watercolor simulation techniques in *Curtis et al. 1997 Computer-Generated Watercolor*. Created a real-time watercolor simulation with pigment flow effects such as edge darkening, backruns, blooming, and granulation. Implemented forward Euler integration, staggered grid, used C++. *Project link*.
- **2021.** Wrote ray tracer and video animation in C++. Implemented diffuse/Phong shading, mirror/glossy reflections, refractions/fresnel effects, soft shadows, supersampling, BVH, .obj loading. *Final render link*.
- **2019.** Created an interactive WebVR experience to visualize 3D surfaces in the *DLMF* dataset. *Project link*. Work presented at the SIGGRAPH 2018 BOF session *Immersive Visualization for Research, Science and Art*.

WebVR

- **2019.** Created Bulletin, a WebVR bulletin board for posting anonymous messages. Used A-Frame, Three.js. Won the Best Gaming/VR Hack at YHack 2019, out of 140+ submissions & 400+ participants. *Project link*.

SKILLS

Coding C++, C, Python, Java, Bash, Thrift, Racket — Learning Assembly, JS, HTML/CSS

Tools UNIX, Git, OpenGL, Figma, Adobe (Illustrator, InDesign)