Kevin Chen

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Education

Yale University **08.2019 – 05.2023**
B.S. Computer Science (New Haven, CT)

Coursework Data Structures, Algorithms, Systems Programming, Operating Systems, Computer Graphics, Discrete Math, Linear Algebra, Graphic Design, Typography

Leadership Co-President of Design at Yale, Creative Director of *The New Journal*

Experience

Software Engineer Intern **05.2022 – 08.2022**
Meta Reality Labs (Burlingame, CA)

- Enhanced spatial map storage to improve the scalability of the SLAM stack for Meta's *Presence Platform*. Considered device power draw and memory performance limitations. Worked on the SLAM tracking and spatial mapping team for Oculus 6DOF headsets.
- Used C++, Bash, adb debugging.

Software Engineer Intern **06.2021 – 08.2021**
Facebook (Menlo Park, CA)

- Developed an internal service to automatically rebalance Twine jobs and containers for stateful services. Improved fault tolerance and machine utilization, freed up to 40k machines across all data centers. *Twine* is Facebook's cluster management system.
- Used Python, Thrift, SQL, async Twine API.

Lead Developer **06.2020 – 05.2021**
Yale Peabody Museum (New Haven, CT)

- Led work on COPISClient, a desktop app that controls a camera-based photogrammetry system. Rewrote programmable OpenGL pipeline with shaders, reducing frame render times by >80%. Redesigned GUI. Designed toolpath generation, ViewCube navigation, and scene object picking.
- Used Python, C++, OpenGL, GLM, GLSL. *Project link*.

Projects

Watercolor paint simulation **2022**

- Developed real-time watercolor simulation in C++ with pigment flow effects based on the SIGGRAPH 1997 paper *Computer-Generated Watercolor*. Implemented edge darkening, backruns, blooming, and granulation. Built staggered grid, used forward Euler integration. *Project link*.

Distributed ray tracer & animation **2021**

- Developed ray tracer and video animation in C++. Implemented diffuse/Phong shading, mirror/glossy reflections, refractions/fresnel effects, soft shadows, and supersampling anti-aliasing. Implemented bounding volume hierarchy (BVH) to accelerate ray intersections. *Final video link*.

Interactive 3D math functions **2019**

- Developed interactive WebVR experiences to showcase 3D math functions in the *DLMF* dataset.
- Demod at the SIGGRAPH 2018 BOF session *"Immersive Visualization for Research, Science and Art"*. *Project link*.

Virtual bulletin board **2019**

- Developed Bulletin, a WebVR bulletin board for anonymous messages. Used JavaScript, Python.
- Won Best Gaming/VR Hack at YHack 2019, out of 140+ projects & 400+ participants. *Project link*.

Skills

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

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