

Zudi Xie

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EDUCATION

University of California, Berkeley

Berkeley, CA

Bachelor of Arts in Computer Science (Expected May 2023)

Aug. 2019 – Now

Relevant Courses:

GPA: 3.84

- 16A & 16B: Designing Information Devices and Systems I & II
- 61A: Structure & Interpretation of Computer Programs | 61B: Data Structures | 61C: Machine Structures
- 80: VR Development | 186: Database Systems | 188: Artificial Intelligence | 161: Computer Security
- 184: Computer Graphics | 204: 3D Modeling & Animation | 169A: Software Engineering

SKILLS

Languages: C#, Java, Python, C/C++, HLSL, SQL, JavaScript, Ruby

Frameworks & Libraries: Studied Unity URP & HDRP's source codes, SSE SIMD Optimization, Ruby on Rails

Tools: Git, Perforce, Unity, TravisCI, Maya, SubstancePainter

Other Skills: German (Entry Level), Mandarin

EXPERIENCE

Software Engineer Intern (Apex Legends)

May. 2022 – Jul. 2022

Respawn Entertainment, Electronic Arts

Remote / Redwood, CA

- Worked in the Live Contents team of Apex Legends to maintain and develop in-game store and event pages.
- Wrote multi-threaded C++ codes & Squirrel scripts on a modified Source engine to maximize game performance.
- Collaborated with engineers as well as other roles including producers, the quality assurance team, and the localization team to implement their requests and fix the bugs they raised.

Lead Mentor & Mentor

Dec. 2019 – Present

Game Design & Development Club

Berkeley, CA

- Manage a team of 9 mentors to plan and host activities of a game dev club (300+ people), including workshops, promotion, general meetings, game pitches & playtests etc.
- Lead a group of 7-8 people to make a game every semester using Unity. In charge of organizing weekly meetings, setting up milestones, giving out Unity tutorials, and developing the game with them.
- Have produced 5 games, currently working on the 6th game.

Game Dev Community Organizer

Mar. 2020 – Present

Online

- Run an online community for Chinese game developers (1900+ people).
- Provide a platform for indie game studios to promote and recruit, and for game devs to ask for help.
- Have a sub-community focusing on Q&A rendering questions encountered during development.

PROJECTS

UltimateTAA Render Pipeline | Unity, C#, HLSL, Git (22 stars & 6 forks)

[Project Link](#)

- Developed a forward/deferred hybrid render pipeline based on Unity's scriptable render pipeline framework.
- Implemented a physically based materials, supporting features like clear-coat, anisotropic specular, fabric cloth, and parallax occlusion mapping; as well as a post processing pipeline, including ACES tonemapping, color grading, HUE shift, exposure and contrast adjustment.
- Implemented temporal anti-aliasing, including a variety of resampling, anti-ghosting, and anti-flickering features.
- Implemented dynamic diffuse GI with baked gbuffer probes inspired from Demon's Souls Remake.
- Currently working on a gpu driven mesh cluster render pipeline with two-pass occlusion culling.

SRP Render Pipeline | Unity, C#, HLSL, Git (101 stars & 16 forks)

[Project Link](#)

- Developed a forward+ render pipeline in Unity, supporting 2.5d tile-based light culling.
- Implemented cascaded shadowmaps for directional/spot/point lights, which also support PCF soft shadows.
- Implemented dithered transparency rendering with gaussian blur and transparent shadows.

Rasterizer & Pathtracer | C++, OpenGL, Git

- Developed a cpu-based software rasterizer, including optimized triangle rasterization, barycentric interpolation, and texture mapping (supporting mipmap sampling, bilinear & trilinear texture filtering).
- Developed a cpu-based software path tracer, supporting microfacet and glass (reflection & refraction) materials.
- Implemented BVH acceleration based on SAH, importance sampling, Russian Roulette termination, recursive path tracing, and adaptive sampling.