JACOB S. HAYDEL

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EDUCATION

B.S. / M.S. University of Utah Aug. 2017 – May. 2022
Major: Computer Science / Computing (Graphics and Visualization Track)
B.S. GPA: 3.96, M.S. GPA: 3.81

Ph.D. University of Utah Aug. 2022 – Present
Major: Computing (Graphics and Visualization Track)
GPA: N/A

RESEARCH PAPERS

- Locally-Adaptive Level-of-Detail for Hardware-Accelerated Ray Tracing

WORK EXPERIENCE

Hardware Ray Tracing Research Group (HWRT) April 2018 – Present
Salt Lake City, UT
Research Assistant

- Developed a cycle accurate hardware simulator called arches.
- Researched adaptive tessellation for hardware accelerated raytracing.
- Currently researching novel raytracing architectures.

Scientific Computing Imaging Institute (SCI) January 2019 – May 2020
Salt Lake City, UT
Graphics Developer Intern

- Worked on SCIRun, a Scientific Problem-Solving Environment.
- Fixed and extended the in-house OpenGL based renderer.

Qualcomm May 2021 – August 2021
Salt Lake City, UT
Graphics Research Intern

- Worked on developing and testing a ray tracing architecture.

Reality Labs Research (Meta) May 2022 – August 2022
Redmond, WA
Research Scientist Intern

- Worked on researching methods for anit-aliasing in the context of hardware ray casting.

Advanced Micro Devices (AMD) May 2023 – August 2023
Austin, TX
Raytracing Architecture Intern

- Worked on shader execution reordering for hardware raytracing.

PROJECTS

- Spectral Path Tracer in C++. Implements BRDF importance sampling, explicit light sampling, physically based materials, dispersion, spectral reconstruction, texture mapping, and environment mapping.

TECHNICAL EXPERIENCE

C/C++, Python, OpenGL, GLSL, x86, and RISC-V