Alexander (Zander) Majercik

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majercik@stanford.edu

Education

Stanford University — Stanford, CA

PhD — *September 2023 – Present*

Research focus: Accelerated simulation for reinforcement learning in games.
Adviser: Kayvon Fatahalian

Williams College — Williamstown, MA

B.A. cum laude with Honors in Computer Science — *2013-2017*

GPA: 3.77
Thesis: rvv: An Intuitive and Principled Version Control System
Adviser: Morgan McGuire

Experience

ROBLOX Research — San Mateo, CA

Research Intern — *June 2024 – September 2024*

Developed high throughput game abstractions for learning character control.

NVIDIA Research — Santa Clara, CA

Research Scientist — *July 2020 – August 2023*

Published multiple papers on real-time global illumination, which formed the foundation of the NVIDIA RTXGI SDK.

Research Engineer — *June 2018 – July 2020*

Designed novel rendering algorithms with a focus on GPU ray tracing.
Accelerated deep learning inference on multiple chips.
Engineered software infrastructure for computer graphics and vision science experiments.
Promoted July 2019.

Research Intern — *June 2017 – June 2018*

Researched AI and computer graphics techniques for VR/AR. Developed research infrastructure for computer vision and GPU ray tracing.

Selected Publications

- **Majercik, Z.**, Müller, T., Keller, A., Nowrouzezahrai, D. and McGuire, M. (2022), Dynamic Diffuse Global Illumination Resampling. Computer Graphics Forum, 41: 158-171. https://doi.org/10.1111/cgf.14427
- **Zander Majercik**, Adam Marrs, Josef Spjut, and Morgan McGuire, Scaling Probe-Based Real-Time Dynamic Global Illumination for Production, Journal of Computer Graphics Techniques (JCGT), vol. 10, no. 2, 1-29, 2021 Available online http://jcgt.org/published/0010/02/01/
- **Zander Majercik**, Jean-Philippe Guertin, Derek Nowrouzezahrai, and Morgan McGuire, Dynamic Diffuse Global Illumination with Ray-Traced Irradiance Fields, Journal of Computer Graphics Techniques (JCGT), vol. 8, no. 2, 1-30, 2019 https://jcgt.org/published/0008/02/01/
- Jonghyun Kim, Youngmo Jeong, Michael Stengel, Kaan Akşit, Rachel Albert, Ben Boudaoud, Trey Greer, Joohwan Kim, Ward Lopes, **Zander Majercik**, Peter Shirley, Josef Spjut, Morgan McGuire, and David Luebke. 2019. Foveated AR: Dynamically-Foveated Augmented Reality Display. ACM Trans. Graph. 38, 4, Article 99 (July 2019), 15 pages. https://doi.org/10.1145/3306346.3322987
- Joohwan Kim*, Michael Stengel*, **Alexander Majercik**, Shalini De Mello, David Dunn, Samuli Laine, Morgan McGuire, and David Luebke. 2019. NVGaze: An Anatomically-Informed Dataset for Low-Latency, Near-Eye Gaze Estimation. In CHI Conference on Human Factors in Computing Systems Proceedings (CHI 2019), May 4-9, 2019, Glasgow, Scotland UK. ACM, NewYork, NY, USA, 12 pages. https://doi.org/10.1145/3290605.3300780
- **Alexander Majercik**, Cyril Crassin, Peter Shirley, and Morgan McGuire, A Ray-Box Intersection Algorithm and Efficient Dynamic Voxel Rendering, *Journal of Computer Graphics Techniques* (*JCGT*), vol. 7, no. 3, 66-81, 2018 http://jcgt.org/published/0007/03/04/