Kai Yan

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EDUCATION

University of California, Irvine   Jun. 2020 – Present
Ph.D. candidate in Computer Science   Irvine, CA

- **Research**: Differentiable Rendering
- **Advisor**: Shuang Zhao

University of California, Irvine   Sep. 2016 – Mar 2020
Bachelor of Science in Computer Science && Computer Game Science   Irvine, CA

- **Minor**: Film and Media Studies
- **Research**: Computer Graphic, Machine Learning, Computer Vision
- **Advisor**: Shuang Zhao
- **Thesis**: Path-Space Differentiable Rendering

PUBLICATIONS

Efficient Estimation of Boundary Integrals for Path-Space Differentiable Rendering

Kai Yan, Christoph Lassner, Brian Budge, Zhao Dong, and Shuang Zhao

ACM Transactions on Graphics (**SIGGRAPH 2022**), 41(4), July 2022

Physics-Based Inverse Rendering using Combined Implicit and Explicit Geometries

Guangyan Cai, **Kai Yan**, Zhao Dong, Ioannis Gkioulekas, and Shuang Zhao

Computer Graphics Forum (**EGSR 2022**), 41(4), July 2022

Path-Space Differentiable Rendering

Cheng Zhang, Bailey Miller, **Kai Yan**, Ioannis Gkioulekas, and Shuang Zhao

ACM Transactions on Graphics (**SIGGRAPH 2020**), 39(4), July 2020

SYSTEMS

TensorRay (Ongoing)

- https://tensorray.readthedocs.io/en/latest/
- TensorRay is a high performance GPU based differentiable renderer as a follow-up work of PSDR-CUDA collaborating with NVIDIA.

PSDR-CUDA

- Authors: **Kai Yan**, Shuang Zhao
- https://psdr-cuda.readthedocs.io/en/latest/core_intro.html
- PSDR-CUDA is a GPU based differentiable renderer using Optix 7 for ray tracing and Enoki for reverse-mode automatic differentiation. It have been used in several SIGGRAPH/EGSR/CVPR projects

INTERNSHIPS

Adobe Research   Jun. 2022 – Present
Research Intern   San Jose, CA

- Collaborators: Milos Hasan, Fujun Luan, Valentin Deschaintre
- Topic: Scene Level Inverse Rendering with Learning Priors and Physics-Based Differentiable Rendering.

Meta Reality Lab   Jun. 2021 – Feb. 2022
Research Intern   Redmond, WA

- Collaborators: Zhao Dong, Christoph Lassner, Brian Budge
- Topic: Object Level Inverse Rendering using Physics-Based Differentiable Rendering.

SKILLS

Languages : C/C++, Python, Matlab, Mathematica
Tools : CUDA, PyTorch, Optix, Mitsuba, Blender, Unity, Unreal
Hobbies : Anime, Games, Movies, CG, Art, Modeling, Piano