YIHENG ZHANG

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EDUCATION

Stanford University Sept. 2019 - Present
M.S. in Computer Science
Advisor: **Pat Hanranhan**

Shanghai Jiao Tong University Sept. 2015 - Jun. 2019
*B.S. in Computer Science with **Honors** - Overall GPA: 3.95/4.0*
Thesis: Deep Denoising in Monte Carlo Path Tracing Rendered Images
Related course: Computer Graphics, Data Visualization, Digital Image Processing, Machine Learning, Algorithm and Complexity, Theory of Computation, Operating Systems, Computer Architecture, Computer Networks, Data Structure

RESEARCH EXPERIENCE

Lab of Digital Media and Computer Vision (DMCV) Feb. 2017 - Jun. 2019
Research Assistant
Advisor: Lizhuang Ma (Distinguished Professor)
Research Topic: physically-based rendering, rendering denoise

WORKING EXPERIENCE

Intel APAC R&D Sept. 2018 - Mar. 2019
Graphics Software Engineering Intern, Visual Computing Enabling

- Unreal Engine 4 parallel rendering optimization and hardware interface module C++ R&D
- DirectX 11/12 threaded rendering development with Intel TBB and Microsoft WTP
- Created a open-source tool to transform .sdkmesh model to .obj model
- Created a open-source scene on UE4 to demonstrate the VCE group's improved parallel rendering

PUBLICATIONS

Light Transport Simulation via Generalized Multiple Importance Sampling Apr. 2018
*Qi Liu, **Yiheng Zhang**, Lizhuang Ma - CVM 2018 Oral*

- A generalized multiple importance sampling me in path tracing
- Improved the efficiency of vertex connecting and merging algorithm by $\sim 20\%$

SELECTED PROJECTS

Progressive Multiple Network Rendering Denoise Apr. 2018 - Present

- A Multi-stage CNN-based offline rendering denoise network
- Designed a frequency prediction module to fuse different denoised images with adversarial training

U-Net Interactive Object Selection Oct. 2017 - Jan. 2018

- An open-source deep learning solution for interactive object selection
- Increased accuracy by 15.91% on salient object compared with *Deep Interactive Object Selection*.

Simple Path Tracer Nov. 2017

- Built scene and implemented core algorithm, mathematical utilities courtesy: SmallVCM
- Specular, diffuse, refraction are included

Isochart-based Auto Geometry Mesh Cutting and UV Alignment Apr. 2017 - Jun. 2017

- An interactive approach to generate UV alignment of object mesh charts
- Responsible for testing and optimizing the mesh texture coordinate processing part

SKILLS

C++, Python, PyTorch, Matlab, Git, Linux, JavaScript, Ray Tracing, Real-time Rendering, Audio Mixing