shanaf@connect.ust.hk
+852-69924869

Songfang Han

Summary

- Solid research experience in computer graphics with focus on 3D geometry processing.
- Industry experience in developing and applying deep learning methods in image processing and computer photography.
- Seeking for postdoc position in virtual and augmented reality

Education

Hong Kong University of Science and Technology (HKUST), Hong Kong
Ph.D. in Electronic and Computer Engineering — Nov 2018 (expected)
- Advisor: Pedro V. Sander

Tongji University, Shanghai, China
B.E. in Electrical and Electronics Engineering — 2013

Related Experience

SenseTime, Hong Kong (an AI company using deep learning as core technology)
Research intern — Jun 2017 – Present
- **Relighting:** Developed a real-time CNN-based algorithm to add portrait lighting effects to photos, including studio, contour, and arbitrary lighting effect. The result is natural looking and temporally coherent for video input.
- **Deep Image Color Enhance:** Trained neural networks to replace image processing pipelines like HDR and a set of Lightroom presettings. The neural networks were implemented on Tensorflow and Caffe.
- **Beautify Face:** Contributed an algorithm to achieve radiant facial skin in selfies, to be used in mobile apps. Developed algorithms to automatically detect blemishes on skin, which is robust to spectacle frame.

HKUST, Hong Kong
Efficient Triangle Reordering of Translucent Model — Aug 2016 – May 2017
- Proposed an efficient algorithm that recovers nearly accurate back-to-front order for arbitrary viewpoints in real-time for large static translucent models.
- Achieve about 2x faster rendering speed compared to the method proposed in Depth Presorted Triangle Lists.

Triangle Reordering in Animation Scenes — Nov 2014 – Dec 2015
- Proposed an effective algorithm that renders opaque models with statistically low overdraw orders, which are precomputed offline, in animation scenes.
- This is the first triangle ordering work in animation, which outperformed the state of the art for static models.

Publications

Songfang Han, Ge Chen, Pedro V Sander, Diego Nehab. *In-Depth Buffers*.Journal of Proceedings of the ACM on Computer Graphics and Interactive Techniques, Vol. 1, No. 1, Article 2, 2018.

Songfang Han, Pedro V Sander.*Triangle Reordering for Efficient Rendering in Complex Scenes*. Journal of Computer Graphics Techniques (JCGT), vol. 6, no. 3, 38-51, 2017.

Songfang Han, Pedro V Sander. *Triangle reordering for reduced overdraw in animated scenes*. SIGGRAPH Symposium on Interactive 3D Graphics and Games 2016.

Graduate Coursework

Computer Vision, Combinatorial Optimization, Convex Optimization, Stochastic Processes, Digital Image Processing, Video-Signal Processing, Design Thinking Summer Course

Computer Skills

Programming: Python, C++, MATLAB, JavaScript
Graphics: OpenGL, OpenCV, WebGL, Maya, Blender
Deep Learning: Tensorflow, Pytorch, Caffe
OS: Linux, Windows, macOS

Awards and Honors

Graduate Research Scholarship, *HKUST* — 2013 – 2018
Meritorious Winner of Mathematical Contest in Modeling, *COMAP* — 2012
National Scholarship, *Tongji University* — 2011
First-class Scholarship, *Tongji University* — 2009 – 2011