

## 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 presets. 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