Qi Sun

qisun0@gmail.com http://www.qisun.me

EDUCATION

Doctor of Philosophy 2013/08 - 2018/05
Computer Science, Stony Brook University, *Stony Brook, NY*
Advisor: Distinguished Professor Arie Kaufman
Dissertation: Computational Methods for Immersive Perception

Bachelor of Science 2013/08
Mathematics, Taishan Honors College, Shandong University, China 2010/10 - 2013/08
Computer Science, Shandong University, China 2009/09 - 2010/10

EMPLOYMENT

Research Scientist 2018/06 - Now
Adobe Research, *San Jose, CA*

Research Intern 2017/07 - 2017/09
Adobe Research, Procedural Imaging Group, *San Jose, CA*
With by Paul Asente, Cynthia Lu and Li-Yi Wei

Research Intern 2017/04 - 2017/07
NVIDIA Research, New Experiences Group, *Redmond, WA*
With Anjul Patney, Morgan McGuire, Omer Shapira, Aaron Lefohn and David Luebke

Research Intern 2016/06 - 2016/08
NVIDIA Research, New Experiences Group, *Santa Clara, CA*
With Fu-Chung Huang, Joohwan Kim and David Luebke

Research Intern 2012/11 - 2013/02
Microsoft Research Asia, Hardware Computing Group, *Beijing, China*

RESEARCH INTERESTS

My research bridges computer graphics, human-computer interaction, VR/AR, and human visual optics. Beyond academic publications, my research has also been demonstrated to hundreds of conference attendees, attracted major media (e.g., BBC) reports, and transferred to commercial systems with 40,000+ customers.

PUBLICATIONS

[13] **Eccentricity Effects on Blur and Depth Perception**
Qi Sun, Fu-Chung Huang, Li-Yi Wei, David Luebke, Arie Kaufman, Joohwan Kim
Optics Express 2019 (to appear)

[12] **DiffTaichi: Differentiable Programming for Physical Simulation**
Yuanming Hu, Luke Anderson, Tzu-Mao Li, **Qi Sun**, Nathan Carr, Jonathan Ragan-Kelley, Frédo Durand
arXiv:1910.00935

[11] **Reducing Simulator Sickness with Perceptual Camera Control**
Ping Hu, **Qi Sun**, Piotr Didyk, Li-Yi Wei, Arie Kaufman
SIGGRAPH Asia 2019

[10] **Learning to Reconstruct 3D Manhattan Wireframes from a Single Image**
Yichao Zhou, Haozhi Qi, Simon Zhai, **Qi Sun**, Zhili Chen, Li-Yi Wei, Yi Ma
ICCV 2019 (Oral Presentation)

[9] **A Transparent Display with Per-Pixel Color and Opacity Control**
TJ Rhodes, Gavin Miller, **Qi Sun**, Daichi Ito, Li-Yi Wei
SIGGRAPH 2019 Emerging Technologies

[8] **Towards Virtual Reality Infinite Walking: Dynamic Saccadic Redirection**
Qi Sun, Anjul Patney, Li-Yi Wei, Omer Shapira, Jingwan Lu, Paul Asente, Suwen Zhu, Morgan McGuire, David Luebke, Arie Kaufman
SIGGRAPH 2018

[7] **Perceptually-Guided Foveation for Light Field Displays**
Qi Sun, Fu-Chung Huang, Joohwan Kim, Li-Yi Wei, David Luebke, Arie Kaufman
SIGGRAPH Asia 2017

[6] **Mapping Virtual and Physical Reality**
Qi Sun, Li-Yi Wei, Arie Kaufman
SIGGRAPH 2016

[5] **Poster: Buyers Satisfaction in A Virtual Fitting Room Scenario Based on Realism of Avatar**
Qi Sun, Seyedkoosha Mirhosseini, Ievgeniia Gutenko, Ji Hwan Park, Charilaos Papadopoulos, Bireswar Laha, and Arie E. Kaufman
IEEE Symposium on 3D User Interfaces, 3DUI 2015

[4] **Benefits of 3D Immersion for Virtual Colonoscopy**
Koosha Mirhosseini, **Qi Sun**, Krishna Gurijala, Bireswar Laha, Arie Kaufman
IEEE Visualization Workshop on 3DVis 2014

[3] **Data-Driven Human Motion Synthesis Based on Angular Momentum Analysis**
Ping Hu, **Qi Sun**, Xiangxu Meng, and Jingliang Peng
IEEE International Symposium on Circuits and Systems, ISCAS 2013

[2] **Modeling 3D Faces from Samplings via Compressive Sensing**
Qi Sun, Yanlong Tang, and Ping Hu
International Conference on Digital Image Processing, 2013

[1] **Kinect-Based Automatic 3D High-Resolution Face Modeling**
Qi Sun, Yanlong Tang, Ping Hu, and Jingliang Peng
International Conference on Image Analysis and Signal Processing 2012

SELECTED PRESS/MEDIA

Adobe Glasswing Transparent Display.
The Verge, CNET, Axios, Next Reality, Printed Electronics World, TechHQ etc.

Towards Virtual Reality Infinite Walking.
BBC News, SIGGRAPH blog, IEEE, Adobe News, NVIDIA Blog, Two Minute Papers, Stony Brook

News, Road to VR, Hackaday, VR Focus, VR World, Inverse, ScienceDaily, eurekAlert, newsAtlas, Sohu.com (Chinese), RedShark News, VR Soldier, Stylus, InAVate, 4gamer (Japanese) Virtual Reality Magazine (German), Microsiervos (Spanish) etc.

Mapping Virtual and Physical Reality.
SIGGRAPH Technical Papers Preview, Business Wire, Seamless Virtual Reality News (Japanese), leiphone.com/sina.cn etc. (Chinese), Tencent gameinstitute 2016 white paper, Game II DOOSAN Gallery New York.

Perceptually-Guided Foveation for Light Field Displays.
Road to VR, Seamless Virtual Reality News (Japanese).

TEACHING/ADVISING

Guest Lecturer
CSE 564: Visualization, Stony Brook University 2018 Spring
Seminar: Frontiers of Computing Studies, Peking University 2019 Summer

Teaching Assistant
CSE 214: Computer Science II, Stony Brook University 2013 Fall

Graduate Mentor
CSE 593: Independent Study in Computer Science, Stony Brook University 2013 Fall, 2014 Spring

Advisees
Yuanming Hu, PhD student at MIT
Sandra Malpica, PhD student at University of Zaragoza
Yichao Zhou, PhD student at UC Berkeley
Dushyant Goyal, Masters student at Stony Brook University, Now machine learning research engineer at Element Inc.

INVITED TALKS

Human Learning: Understanding and Computing the Eyes and Brain in VR
Schloss Dagstuhl, Wadern, Germany 2019
Max-Planck-Institut für Informatik, Saarbrücken, Germany 2019
Microsoft Research Asia, Beijing, China 2019

Industrial Innovations in the Age of VR/AR
Wayfair Inc., Boston, MA 2019

Towards Virtual Reality Infinite Walking, Talk & Live Demo
Adobe Tech Summit, San Francisco, CA 2019
GPU Technology Conference (GTC), San Jose, CA 2018

Computational Methods for Immersive Perception
Harvard University, Cambridge, MA 2018
University of Florida, Gainesville, FL 2018
Adobe Research, San Jose, CA 2017
games-cn Webinar 2017

SERVICE

Conference Program Committee

ACM CHI Late-Breaking Works	2020
ACM SIGGRAPH Asia Technical Briefs and Posters	2019
SIGGRAPH Symposium on Interactive 3D Graphics and Games (i3D)	2019-2020

Reviewer

ACM SIGGRAPH, ACM CHI, IEEE Visualization, Computer Graphics Forum (CGF), ACM Transaction on Graphics (TOG), ACM User Interface Software and Technology (UIST), ACM i3D, IEEE 3D User Interfaces (3DUI), IEEE VR [both Conference and Journal tracks], IEEE ISMAR, ACM Symposium on Applied Perception (SAP), IEEE Consumer Electronics Magazine

Other

Adobe Research PhD fellowship committee	2018 - 2019
Adobe Research Women-in-Technology Scholarship	2019

AWARDS

Stony Brook Computer Science Special Chair Fellowship	2013 - 2014
Outstanding Bachelor Thesis Award of Shandong Province, China	2013

GRANTED PATENTS

Adjusting an Angular Sampling Rate during Rendering Utilizing Gaze Information
Qi Sun, Fu-Chung Huang, Joohwan Kim and David Luebke
US10395624B2, granted 2019-08-27

System and Method for Generating a Progressive Representation Associated with Surjectively Mapped Virtual and Physical Reality Image Data
Arie Kaufman, **Qi Sun** and Li-Yi Wei
US10403043B2, granted 2019-09-03