SHAOYU CHEN

1120D, 370 Jay Street ◇ Brooklyn, NY 11201 ◇ (347) · 221 · 8551 ◇ sc6439@nyu.edu

EDUCATION

New York University — New York, NY
Ph.D. in Computer Science — *Sep 2017 - Present*
Advisor: Prof. Claudio Silva — GPA: 3.950/4.000
Research interest: Data Visualization, Virtual Reality

Hong Kong University of Science and Technology (HKUST) — Hong Kong
B.Eng. in Computer Science — *Sep 2013 - May 2017*
First Class Honors, Academic Achievement Award (Top 1%) — GPA: 3.941/4.300

PUBLICATION

- **Shaoyu Chen**, Budmonde Duinkharjav, Xin Sun, Li-Yi Wei, Stefano Petrangeli, Jose Echevarria, Claudio Silva, Qi Sun. "Instant Reality: Gaze-Contingent Perceptual Optimization for 3D Virtual Reality Streaming". In IEEE Transactions on Visualization and Computer Graphics (Proceeding of IEEE VR), 2022.
- **Shaoyu Chen**, Fabio Miranda, Nivan Ferreira, Marcos Lage, Harish Doraiswamy, Corinne Brenner, Connor Defanti, Michael Koutsoubis, Luc Wilson, Kenneth Perlin, Claudio Silva. "UrbanRama: Navigating Cities in Virtual Reality". In IEEE Transactions on Visualization and Computer Graphics, 2021.
- Mingqian Zhao, Yijia Su, Jian Zhao, **Shaoyu Chen**, and Huamin Qu. "Mobile Situated Analytics of Ego-Centric Network Data". In SIGGRAPH Asia Symposium on Visualization, 2017.

PROFESSIONAL EXPERIENCE

NYU Visualization and Data Analytics Research Center (VIDA) — New York, NY
Research Assistant — *Sep 2017 - Present*

- Developed Transparent, Interpretable, and Multimodal Personal Assistant (TIM) on HoloLens 2.
- Proposed a novel deformation approach that projects city onto a non-planar view-dependent surface to overcome the location/navigation limitations caused by occlusion for city scenes in virtual reality using OpenGL and WebVR.
- Performed qualitative user study with architects and urban planning professionals and quantitative user study with general users to validate the effectiveness of the proposed approach.

Adobe Research — San Jose, CA
Research Intern — *May 2020 - Aug 2020*

- Proposed a gaze-contingent perceptual model based on foveation, saccade, and popping to depict spatio-temporal visual behaviors during progressive streaming, including static quality acuity and dynamic change suppression
- Proposed a perceptually optimized high-quality and low-latency 3D immersive streaming method, supporting various 3D computer graphics data formats and accelerated by neural network, using C++, OpenGL and OpenVR.

HKUST Department of Computer Science and Engineering — Hong Kong
Undergraduate Researcher — *Jun 2015 - Apr 2017*

- Worked on identity-preserving face super-resolution using GAN and other deep learning approaches with TensorFlow.
- Worked on visual analytics of spatio-temporal data and on mobile devices. (Honorable Mention in IEEE VAST Challenge 2015 and Winner in IEEE VGTC VPG International Data-Visualization Contest 2015)

DJI — Shenzhen, China
Research Intern — *Jun 2016 - Aug 2016*

- Developed automated systems for unmanned aerial vehicles to follow specified objects and avoid obstacles using neural networks and reinforcement learning with MATLAB, C++ and OpenCV.
- Improved the simulator that allows unmanned aerial vehicles to fly in a virtual environment as a pilot user.

SKILLS

Programming	Python, C++, C, JavaScript, MATLAB, SQL
Machine Learning	scikit-learn, TensorFlow, PyTorch, XGBoost, OpenCV
Framework	OpenGL, WebVR, OpenVR, Eigen, NumPy, SciPy, Pandas