Shengqu Cai

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Education

since 2023	PhD in Computer Science, **Stanford University**, United States Advised by Prof. Gordon Wetzstein and Prof. Leonidas Guibas. GPA: 4.3/4.3
2020 - 2023	MSc in Computer Science, **ETH Zürich**, Switzerland Advised by Prof. Luc Van Gool. GPA: 5.7/6.0 (Major GPA: 6.0/6.0)
2017 - 2020	BSc (Hons) in Computer Science, **King's College London**, United Kingdom First Honour. Average: 90% (GPA: 4.0/4.0, $\approx$ top 1%)

Research Experience

2023	Research Intern at **Adobe Research**, California, USA Paper published at CVPR'2024 [3]. Patent [B].
2022	Visiting Student Researcher at **Stanford University**, California, USA Paper published at ICCV'2023 [2]. Supervisor: Prof. Gordon Wetzstein
2021	Research Student at **ETH Zürich CVL & Toyota TRACE**, Zürich, Switzerland Paper published at CVPR'2022 [1]. Patent [A]. Supervisor: Dr. Dengxin Dai, Prof. Luc Van Gool

Publication

[4] Collaborative Video Diffusion: Consistent Multi-video Generation with Camera Control, in **arXiv**, 2024.
Zhengfei Kuang*, **Shengqu Cai***, Hao He, Yinghao Xu, Hongsheng Li, Leonidas Guibas, and Gordon Wetzstein.

[3] Generative Rendering: Controllable 4D-Guided Video Generation with 2D Diffusion Models, in **CVPR**, 2024.
Shengqu Cai, Duygu Ceylan, Matheus Gadelha, Chun-Hao Paul Huang, Tuanfeng Yang Wang, and Gordon Wetzstein.

[2] DiffDreamer: Towards Consistent Unsupervised Single-view Scene Extrapolation with Conditional Diffusion Models, in **ICCV**, 2023.
Shengqu Cai, Eric Ryan Chan, Songyou Peng, Mohamad Shahbazi, Anton Obukhov, Luc Van Gool, and Gordon Wetzstein.

[1] Pix2NeRF: Unsupervised Conditional π-GAN for Single Image to Neural Radiance Fields Translation, in **CVPR**, 2022.
Shengqu Cai, Anton Obukhov, Dengxin Dai, and Luc Van Gool.

Patent

[B] Diffusion-based Novel View Synthesis and Animation
US patent, filed in 2023 by Adobe.

[A] System for Unsupervised Single Image to Neural Radiance Fields Translation
European patent, filed in 2022 by Toyota, approved in 2023.

Teaching Experience

2019 | Practical Experiences Of Programming, King's College London

Industrial Experience

2020 | Technology Analyst at **China National Petroleum Corporation**, Shenyang, China

2018 | Software Engineer at **Neusoft**, Shenyang, China

2018 | Software Engineer at **China National Petroleum Corporation**, Shenyang, China

Projects

2021 | Real Time Photorealistic Neural Rendering in VR
at **Computer Vision and Learning Group, ETH Zürich**, Zürich, Switzerland
Description: Deploy per-frame translation module on Oculus Quest 2 using Barracuda and Unity.

2021 | Viewpoint Adaptation in a Synthetic Environment
at **Computer Vision and Geometry group, ETH Zürich**, Zürich, Switzerland
Description: SLAM module training augmentation with synthetic world model correspondence. Part of the working package available here.

2021 | Semi-supervised Semantic Amodal Hand Gesture Segmentation
at **ETH Zürich**, Zürich, Switzerland
Description: Occluded hand gesture segmentation with semi-supervised pipeline.

2020 | Adapt RCNN for Natural language to SQL Translation
at **ETH Zürich**, Zürich, Switzerland

2018 | Ocado Multi-agent Planning
at **King's College London**, London, United Kingdom

2018 | Adapt Deep learning to Episodic non-Markov Localization
at **King's College London**, London, United Kingdom

Academic services

Conference review: ECCV22, CVPR23, ICCV23, NeurIPS23, ICLR23, ICLR24, ICML24, CVPR24, ECCV24
Journal review: IJCV23, Computing Surveys, Eurographics

Languages

English: Fluent
Chinese: Mothertongue