Shengqu Cai

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Education

since 2023 | **Stanford University**, California, USA
PhD in Computer Science
GPA: 4.3/4.3

2020 - 2023 | **ETH Zürich**, Zürich, Switzerland
MSc in Computer Science, *Major in Visual Computing*
GPA: 5.7/6.0, Major GPA: 6.0/6.0

2017 - 2020 | **King's College London**, London, United Kingdom
BSc (Hons) in Computer Science
Average: 90% (GPA: 4.0/4.0, $\approx$ top 1%), graduated with First Honour

Research Experience

2023 | Research Intern at **Adobe Research**, California, USA
Project: Diffusion-based animation.
Paper published at CVPR'2024 [3]. Patent [B].

2022 | Visiting Student Researcher at **Stanford University**, California, USA
Master thesis at Stanford Computational Imaging Group.
Project: Unsupervised one-shot scene extrapolation.
Paper published at ICCV'2023 [2].
Supervisor: Prof. Gordon Wetzstein

2021 | Research Student at **ETH Zürich CVL & Toyota TRACE**, Zürich, Switzerland
Project: Unsupervised one-shot novel view synthesis.
Paper published at CVPR'2022 [1]. Patent [A].
Supervisor: Dr. Dengxin Dai, Prof. Luc Van Gool

Publication

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

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

[1] Pix2NeRF: Unsupervised Conditional π-GAN for Single Image to Neural Radiance Fields Translation.
Shengqu Cai, Anton Obukhov, Dengxin Dai, and Luc Van Gool.
In: CVPR, 2022.
Featured: NeRF at CVPR 2022, datagen.tech, metaphysic.ai, etc.

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

2023	Research Intern at **Adobe Research**, San Jose, USA Research on enhancing video editing tools. Mentor: Dr. Duygu Ceylan.
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, CVPR24
Journal review:	IJCV23, Computing Surveys, Eurographics

Languages

English:	Fluent
Chinese:	Mothertongue