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

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 [3]. Patent [A].
Supervisor: Dr. Dengxin Dai, Prof. Luc Van Gool

2019 - 2020 | Research student at **King's College London**, London, United Kingdom
Bachelor final thesis, received high distinction(85%).
Project: Invariant Information Clustering with videos.
Supervisor: Dr. Michael Spratling

Publication

[1] 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.
Under review, 2023.

[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.

[3] 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

[A] System for Unsupervised Single Image to Neural Radiance Fields Translation
European patent: EP 22 158 531.8.
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