

Shengqu Cai

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RESEARCH INTERESTS

Using AI to solve fundamentally ill-posed visual problems, including but not limited to: neural rendering, generative models, scene representation, visual content creation, etc.

EDUCATION

since 2020	ETH Zürich , Zürich, Switzerland MSc in COMPUTER SCIENCE, <i>Major in Visual Computing</i> 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, <i>AI Specialization</i> 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: scene extrapolation 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 [2]. Patent application filed [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] DiffDreamer: Consistent Single-view Perpetual View Generation with Conditional Diffusion Models
Shengqu Cai, Eric Ryan Chan, Songyou Peng, Mohamad Shahbazi, Anton Obukhov, Luc Van Gool, and Gordon Wetzstein.
Under review. 2022.
- [2] Pix2NeRF: Unsupervised Conditional π -GAN for Single Image to Neural Radiance Fields Translation.
Shengqu Cai, Anton Obukhov, Dengxin Dai, and Luc Van Gool.
In: IEEE/CVF Conference on Computer Vision and Pattern Recognition (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.
Application filed in 2022 by Toyota.

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
2019 | 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

LANGUAGES

ENGLISH: Fluent (IELTS 8.0)
CHINESE: Mother tongue
GERMAN: Basic Knowledge

REFERENCES

Gordon Wetzstein, Associate Professor at Stanford, gordon.wetzstein@stanford.edu
Dengxin Dai, Senior Researcher at MPI for Informatics, ddai@mpi-inf.mpg.de
Luc Van Gool, Professor at ETH Zürich, vangool@vision.ee.ethz.ch