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, *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, *AI Specialization*
Average: 90% (GPA: 4.0/4.0, ≈ 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 [1]. 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] 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 - 2019	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

Languages

English:	Fluent (IELTS 8.0)
Chinese:	Mothertongue
German:	Basic Knowledge

References

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