EDUCATION

University of Cambridge

Cambridge, UK PhD Computer Science

Research Interests: computer vision, neural implicit representation, image-based rendering, novel view synthesis

University College London (UCL)

2017 - 2021

2021 - Now

London, UK MEng Computer Science First Class Honours (Average 84%) Dean's List Award

RESEARCH EXPERIENCE

Kubric

Oct – Nov 2021

- **Data Generation**: participated in <u>Kubric</u>, a Google research project on data generation pipeline. We demonstrated the effectiveness of data synthesized by challenging existing datadriven researches.
- Surface Reconstruction: generated datasets with varying properties including non-genus-0 topology, non-textured surface, sharp edges, nonrigid motion to challenge <u>LASR</u>, a method for reconstructing surface geometry from video.

DualNeRF - UCL Master Thesis Sep 2020 – Apr 2021

- Continued on previous research internship and carried out further research on neural implicit representation with <u>Prof. Lourdes Agapito</u>.
- Novel View Synthesis: incorporated multi-view consistency and local feature extraction.
- Dual NeRF-like Decoders: a local decoder conditioned on pixel-wise local feature and a global decoder conditioned on global feature.
- **Depth Query**: Compared to <u>pixelNeRF</u>, we further simplify the network input to replace 3D coordinate with a single "depth" query.

UCL Research Internship

July – Sep 2020

- Computer Vision: carried out Computer Vision research in <u>UCL Vision and Imaging Science</u> group.
- 3D Reconstruction: aimed to achieve unsupervised generalisable 3D reconstruction from a single RGB image via implicit neural representation (NeRF).
- Multi-View Consistency: Applied 3D rotation equivariant to further constrain the extracted feature.

TECHNICAL SKILLS

- **Programming Languages:** Python, C, C#, Java, Node JS, Haskell, SQL, HTML/CSS.
- **Technology/Platform:** Familiar with automated testing (Java, Python, Node JS). Worked with Linux, Unity, Arduino.
- **Spoken Language:** Fluent in English. Native speaker of Mandarin. Beginner of Japanese.

WORK EXPERIENCE

Uni of Cam Supervisor/Ticker

Oct – Now

• **Teaching**: Supervising students of the Further Graphics module, marking their work and answering their questions about the course.

Software Engineering Internship

Jun – Aug 2019

• **NodeJS App**: developed a mobile app that runs marathon events for charity at Softwire. User can link marathons to their fundraisings on JustGiving.

PROJECTS

Influenza Prediction Python (TensorFlow, SK Learn)

- Time Series Forecasting: worked under Prof.
 Ingemar Cox's supervision to develop a machine learning model to predict infection rate of Influenza-like-illness (ILI).
- **Google Query Auxiliary**: provided frequencies of Google queries that contain ILI keywords as side information to the model to improve performance.

Review Analysis System Python (TensorFlow, SK Learn)

 Natural Language Processing: worked with Ocado 10X team to develop a Natural Language Processing model to assess the helpfulness of customer reviews from text.

Hero's Battle

- Unity, C#, PHP, SQL
- Game Development: Led a team of 3 working with Microsoft Research to develop a therapy game that helped Cystic Fibrosis patients to continue repetitive therapies.

AWARDS & ACHIEVEMENTS

UCL Dean's List Award

• Awarded to students with outstanding academic performance.

Google Hash Code 2019 – UK Ranking 21st

- Best score in UCL.
 - Global ranking 449th.

Duke of Edinburgh Bronze Award

 Participated in a series of skill learning, volunteering and expedition.