

Chen Liu

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Education

University College London

PhD

Topics: Dynamic Appearance Modelling

London, UK

09/23 - Present

University College London

MSc Computer Graphics, Vision, and Imaging

Grade: 90.25 (Distinction)

London, UK

09/21 - 09/22

Beihang University

BEng Computer Science

Grade: Major GPA 3.9/4.0, Undergraduate Scholarship, Academic Prize

Beijing, China

09/17 - 06/21

Publications

Learning to learn and sample BRDFs

Chen Liu, Michael Fischer, Tobias Ritschel

Computer Graphics Forum (Proceedings of Eurographics 2023)

Research Experience

Neural BRDF Representation with Meta-learning

MSc Thesis; Supervisor: Prof. Tobias Ritschel

06/22 - 10/22

University College London

- Proposed a new meta-learning pipeline named Meta Sampler to learn sampling pattern, which generalizes to various applications, especially whose performance is closely related to sampling quality
- Learned sampler for Neural BRDF model and achieve BRDF reconstruction, with only 32 samples, five orders of magnitudes fewer than classic fitting, at similar quality
- Conducted empirical experiments that analyze the learned sample pattern and properties of Meta Sampler

Adversarial Robustness in Compressed Models

Research Intern; Supervisor: Prof. Xianglong Liu

09/19 - 02/20

Beihang University

- Proposed idea for reducing adversarial errors by choosing the right number of bits for quantized models
- Conducted training with quantized VGG-16, visualized the feature-map data with PCA and analyzed behaviors of different quantized models towards different adversarial samples
- Integrated the number of bits of quantized models with the Lipschitz constant mathematically in order to infer an appropriate number of bits

Professional Experience

Graphics Engine Support for Game Development

Graphics Engine Intern

05/20 - 02/21

ByteDance

- Cel-shading Solution: implemented the entire rendering solution for characters in our game
- Shader Coding: created a billboard-based godray shader, a cloudsea texture with Parallax Occlusion Mapping, a semi-translucent crystal material, etc
- UE4 Development: modified UE4 sources to add a custom shading model which makes low-cost but decent translucency possible

Recommendation System of Navigation Algorithms

Website Development Intern

06/19 - 09/19

Beihang University

- Built a Browser/Server display platform for our recommendation system with Vue.js and SpringBoot.
- Designed a set of interfaces for the communication between the back-end server and ROS; implemented this framework using Python scripts, which was 5 times faster than standard Socket APIs.

Awards

Beihang Excellent Undergraduate Scholarship (5%, two times)

06/18, 06/19

Eminent Team of 2019 Nationwide CCF BDCI Contest (1%, Team Leader)

12/19

Beihang Outstanding Academic Performance Prize (2%)

06/20