

Chen Liu

☎ (+44) 075 3634 6829 | ✉ chen.liu.21@ucl.ac.uk | 🏠 Homepage

Education

University College London <i>PhD in Computer Graphics</i> Research Topics: (Dynamic) Appearance Modeling, (Inverse) Rendering, Diffusion Models, ...	London, UK 09/23 – Present
University College London <i>MSc in Computer Graphics, Vision, and Imaging</i> Grade: Distinction, Overall 90.25%, Thesis 95%	London, UK 09/21 – 09/22
Beihang University <i>BEng in Computer Science</i> Grade: Major GPA 3.9 / 4.0, Undergraduate Scholarship, Academic Prize	Beijing, China 09/17 – 06/21

Publications

Neural Differential Appearance Equations

[Chen Liu](#), Tobias Ritschel

Transactions on Graphics (Proceedings of SIGGRAPH Asia 2024)

- Proposed a method to reproduce dynamic appearance textures, such as rusting, decaying, and weathering. Our method consistently yields realistic and coherent results, whereas prior works fail under significant temporal appearance variations
- Contributed to neural ODEs achieving both denoising and evolution for dynamics synthesis, with a proposed temporal training scheme
- Provided two pilot datasets on both relightable and non-relightable dynamic appearance, allowing, for the first time, to study such natural phenomena systematically

Learning to Learn and Sample BRDFs

[Chen Liu](#), Michael Fischer, Tobias Ritschel

Computer Graphics Forum (Proceedings of Eurographics 2023)

- 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

Employment

Graphics Engine Support for Game Development <i>Graphics Engine Intern</i>	05/20 – 02/21 <i>ByteDance</i>
<ul style="list-style-type: none">◦ 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	

Services and Awards

Reviewer: Pacific Graphics 2024	
Volunteer: Eurographics Symposium on Rendering 2024, GAMES101 Grader	
UCL PhD Research Studentship from Meta	2023
Beihang Excellent Undergraduate Scholarship (5%, two times)	2018, 2019
Beihang Outstanding Academic Performance Prize (2%)	2020