

Kewei XU

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Hi there !

I am a Ph.D. student in computer graphics. My current research focuses on physically-based(photo-realistic) rendering and appearance modeling, particularly mixed materials.

Education

University of Poitiers - XLIM UMR CNRS 7252, Poitiers, France	Mar 2023 – present
• Ph.D. in Computer Science (Computer Graphics)	
• Advisors: Mickaël Ribardière, Benjamin Bringier, Daniel Meneveaux	
Sorbonne University, Paris, France	Sept 2019 – Dec 2022
• Master of Science in Computer Science and Technology (Computer Vision) - <i>with distinction (mention bien)</i>	
Sorbonne University, Paris, France	Sept 2018 – Sept 2019
• Bachelor of Science in Computer Science and Technology - <i>with distinction (mention bien)</i>	
IUT of Orsay, Paris-Sud University, Orsay, France	Sept 2016 – Sept 2018
• University Diploma of Technology (DUT) in Computer Science - <i>with high distinction (mention très bien)</i>	

Experience

Research Intern, LINEACT CESI – Rouen, France	Feb 2022 – Sept 2022
• Advisors: Nicolas Ragot, Yohan Dupuis	
• Bring computer vision solutions into industrial digital twins by selecting high-score viewpoints to boost recognition reliability and efficiency. We propose a scoring mechanism that chooses optimal views for object recognition and extends to industrial assembly-step recognition; it outperforms random views on small datasets and stays robust under simulated robotic-arm viewpoint offsets up to 10°. Traditional clustering yields F1 score 0.6, while MobileNet with transfer learning reaches 0.9; for datasets with highly similar classes, image similarity can be fused into the score to improve discrimination.	
Software Engineer Intern, Sichuan Normal University – Sichuan, China	Apr 2018 – Jul 2018
• Built full-stack features for a student registration system, Implemented form validation, authorization, improving submission reliability and data integrity. Optimized API and database design to reduce latency on frequent operations.	

Publications

A Discrete Polydisperse Anisotropic BSDF Model based on the Micrograin Framework	In Submission
<i>Kewei Xu, Simon Lucas, Mickaël Ribardière, Benjamin Bringier, Pascal Barla</i>	
Real surface measurement and virtual gonioradiometer for road appearance prediction	
<i>Kewei Xu, Mickaël Ribardière, Benjamin Bringier, Daniel Meneveaux</i>	
• Published in <i>MAM - MANER London, 2024</i>	
Virtually Measuring Layered Material Appearance	
<i>Kewei Xu, Arthur Cavalier, Benjamin Bringier, Mickaël Ribardière, Daniel Meneveaux</i>	
• Published in <i>Journal of the Optical Society of America A, 2024</i>	
View selection for industrial object recognition	
<i>Kewei Xu, Nicolas Ragot, Yohan Dupuis</i>	
• Published in <i>IECON 2022 - 48th Annual Conference of the IEEE Industrial Electronics Society, 2022</i>	

Personal Mini-Projects

A Real-time Rasterizer Little Demo Based on bgfx

[Project page](#)

- Implementation of a little real-time rasterization render based on bgfx. Supports orbit/pan/zoom camera via mouse and keyboard, textured object rendering with skybox/environment maps, a selectable lighting pipeline (Blinn–Phong or PBR with IBL), and real-time shadows using shadow mapping.

Implementation of Variance Soft Shadow Mapping

[Project page](#)

- Implementation of Variance Soft Shadow Mapping (VSSM) in OpenGL and compares it with some other shadow rendering techniques like percentage-closer filtering (PCF) and percentage-closer soft shadows (PCSS).

Super-Resolution for Downscaling on Oceanographic Fields

[Project page](#)

- I frame the downscaling of oceanographic fields as a super-resolution task and address it with a deep learning approach. Building on the classical SRCNN. I optimize both the network architecture and the data pipeline, and achieve satisfactory results on the NATL60 dataset.

Skills

Programming Languages: C/C++, Python, GLSL

Softwares: Mitsuba, OpenGL, Pytorch, LaTex, Blender

Languages: English (Fluent), French (Commonly used in daily life), Chinese (Native speaker)

Hobbies: Motion design and Video editing using Adobe After Effects and Photoshop

[YouTube channel](#)