

# Xilong (Logan) Zhou

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## Education

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Ph.D. in Computer Science and Engineering, **Texas A&M University** 08/2018 – 08/2024  
M.S. in Petroleum Engineering, **Texas A&M University** 08/2014 – 08/2016  
B.E. in Petroleum Engineering, **China University of Petroleum, Beijing** 08/2010 – 06/2014

## Research Interests

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Computer graphics, computer vision, generative AI, 3D generation/reconstruction, view synthesis

## Publications

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**Xilong Zhou**, Milos Hasan, Valentin Deschaintre, Paul Guerrero, Yannick Hold-Geoffroy, Kalyan Sunkavalli, and Nima Khademi Kalantari. “PhotoMat: A Material Generator Learned from Single Flash Photos.” SIGGRAPH 2023.

**Xilong Zhou**, Milos Hasan, Valentin Deschaintre, Paul Guerrero, Kalyan Sunkavalli, and Nima Khademi Kalantari. “A Semi-Procedural Convolutional Material Prior.” Eurographics 2023 (CGF).

**Xilong Zhou**, Milos Hasan, Valentin Deschaintre, Paul Guerrero, Kalyan Sunkavalli, and Nima Khademi Kalantari. “TileGen: Tileable, Controllable Material Generation and Capture.” SIGGRAPH Asia 2022.

**Xilong Zhou** and Nima Khademi Kalantari. “Look-Ahead Training with Learned Reflectance Loss for Single-Image SVBRDF Estimation.” SIGGRAPH Asia 2022 (TOG).

**Xilong Zhou** and Nima Khademi Kalantari. “Adversarial Single-Image SVBRDF Estimation with Hybrid Training.” Eurographics 2021 (CGF).

**Xilong Zhou**, Jenn-Tai Liang, Corbin D Andersen, Jiajia Cai and Ying-Ying Lin. “Enhanced Adsorption of Anionic Surfactants on Negatively Charged Quartz Sand Grains Treated with Cationic Polyelectrolyte Complex Nanoparticles.” Colloids and Surfaces A: Physicochemical and Engineering Aspects, 553, 397-405, September (2018).

## Work Experience

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**Research Intern, Adobe** 02/2024 – 07/2024  
Mentor: Milos Hasan

- Worked on a realistic diffusion-model-based material generator.

**Research Intern, Meta Reality Lab** 09/2022 – 12/2022  
Mentor: Jinhui Xiong

- Worked on view synthesis with multiplane images.

**Research Intern, Adobe** 05/2022 – 08/2022  
Mentor: Milos Hasan

- Worked on a material generator trained on real data.

**Research Intern, Adobe** 05/2021 – 08/2021  
Mentor: Milos Hasan

- Worked on material prior for material acquisition.
- Worked on controllable and tileable material generator.

## *Research Experience*

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### **View Synthesis from Sparse Input Images (ongoing)**

- Developing a 3DGS method to reconstruct scenes from sparse input images using diffusion prior.

### **3D Content Creation (ongoing)**

- Training a 3D content generator on non-curated 2D image dataset.

### **PhotoMat Extension (ongoing)**

- Training a realistic material generator on real photos of environment-lit materials.

### **View synthesis from Stereo Images**

- Work on stereo view synthesis with multiplane disparity and meta learning techniques.

### **Material Generator Trained on Real Flash Photos (SIGGRAPH 2023)**

- Propose the first material generator *PhotoMat* trained exclusively on real flash photos.

### **Semi-procedural Convolutional Material Prior (Eurographics 2023)**

- Propose a tileable, editable and compact semi-procedural material prior.

### **Conditional Material Generation (SIGGRAPH Asia 2022)**

- Propose a conditional tileable generator *TileGen* for material capture and generation.

### **Look ahead training for SVBRDF Estimation from a Single Image (SIGGRAPH Asia 2022)**

- Propose an optimization strategy to estimate SVBRDFs using meta learning technique.

### **SVBRDF Estimation from a Single Input Image (Eurographics 2021)**

- Propose a hybrid training strategy to address the gap between synthetic and real data.

## *Course Projects*

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### **Computational Photography**

- Gradient-based image blending, seam carving, camera calibration, HDR reconstruction.

### **Image Synthesis & Computer Graphics**

- Ray tracer to simulate depth of field, reflection/refraction, motion blur, environment mapping.

## *Teaching Experience*

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PETE 612: Unconventional Oil and Gas, Fall 2015

PETE 321: Formation Evaluation, Spring 2016

VIST 271/270: Computer for Visualization, Spring 2017, Summer 2017

CSCE 110: Programming, Spring 2021

CSCE 222: Discrete Structures for Computing, Fall 2018, Fall 2019, Spring 2020

CSCE 221: Data Structures and Algorithms, Spring 2019

CSCE 441: Analysis of Algorithms, Summer 2019, Fall 2021

CSCE 421: Machine Learning, Fall 2020, Spring 2022

## *Media Coverage*

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[Two Minute Papers](#)

2023

## *Honors & Awards*

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Student Representative in *PetroBowl* Contest at ATCE

2013

National First Prize of National Petroleum Engineering Design Competition

2013

Honorable Mention of Mathematical Contest in Modeling (International)  
National Second Prize of National Mathematics Modeling Contest

2013  
2012

### *Service*

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Reviewer: SIGGRAPH, SIGGRAPH ASIA, Pacific Graphics, CGF, Eurographics

### *Programming Skills*

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Python, PyTorch, GLSL, C++, MATLAB, Mathematica, CUDA