Xilong (Logan) Zhou

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Education

PhD in Computer Science and Engineering, **Texas A&M University** *August 2018 – May 2024*
MS in Petroleum Engineering, **Texas A&M University** *August 2014 – August 2016*
BE in Petroleum Engineering, **China University of Petroleum Beijing** *August 2010 – June 2014*

Research Interest

Computer graphics, computer vision, deep learning, inverse rendering, generative model

Publication

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)

Working Experience

Research Intern, Meta Reality Lab *August, 2022 – December, 2022*
Mentor: Jinhui Xiong

- Work on view synthesis with multiplane images

Research Intern, Adobe Research *May, 2022 – August, 2022*
Mentor: Milos Hasan

- Work on a material generator trained on real data

Research Intern, Adobe Research *May, 2021 – August, 2021*
Mentor: Milos Hasan

- Work on a material prior for material acquisition
- Work on controllable and tileable material generator

Research Experience

View synthesis with multiplane images

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

Material generator trained on real photos (Siggraph 2023)

- Propose the first material generator *PhotoMat* trained exclusively on real flash photos
- Propose an effective real dataset collection strategy

Semi-procedural convolutional material prior (Eurographics 2023)

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

Conditional material GAN (Siggrah Asia 2022)

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

Look ahead training for SVBRDF estimation from a single image (Siggrah Asia 2022)

- Propose an optimization strategy to estimate SVBRDF of materials using meta learning technique

SVBRDF estimation from a single input image (Eurographics 2021)

- Propose a GAN framework using perceptual loss for material acquisition
- Propose a hybrid training strategy to address the gap between synthetic and real data

Study the adsorption property of nanoparticle used in EOR

- Propose a bilayer adsorption model of nanoparticles

Course Projects

Computational photography & digital image

- Gradient-based image blending; seam carving using dynamic programming; camera calibration and HDR reconstruction

Image synthesis & computer graphics

- Implement ray tracer algorithm to simulate depth of field, reflection/refraction, motion blur, environment mapping

Teaching Experience

PETE 612: Unconventional Oil and Gas, 2015F
PETE 321: Formation Evaluation, 2016S
VIST 271/270: Computer for Visualization: 2017S, 2017Su
CSCE 110: Programming, 2021S
CSCE 222: Discrete Structure for Computing, 2018F, 2019F, 2020S
CSCE 221: Data Structure and Algorithm, 2019S
CSCE 441: Analysis of Algorithm, 2019Su, 2021F
CSCE 421: Machine Learning, 2020F, 2022S

Honors & Awards

Student Representative in “Petro Bowl” Contest in ATCE	October 2013
National First Prize of National Petroleum Engineering Design Competition	May 2013
Honorable Mention of Mathematical Contest in Modeling (International)	April 2013
National Second Prize of National Mathematics Modeling Contest	September 2012

Service

Reviewer: SIGGRAPH 23’, SIGGRAPH ASIA 23’, Pacific Graphics 23’, CGF

Programming Skills

Python, Pytorch, GLSL , C++, Matlab, Mathematica, Cuda