Xilong (Logan) Zhou

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Education

PhD in Computer Science and Engineering, **Texas A&M University** *August 2018 – December 2023*

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, deep learning, inverse rendering, material acquisition and generation

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, etc

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