

# Zhang Chen

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## About Me

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I am currently a Senior Research Engineer/Scientist at InnoPeak Technology (a.k.a. OPPO US Research Center), working on R&D for XR (AR/VR/MR) related projects. Before that, I was a visiting scholar / postdoctoral researcher at Louisiana State University, where I worked with Dr. Jinwei Ye. I received my Ph.D. from ShanghaiTech University, advised by Dr. Jingyi Yu, and received my Bachelor's degree from Shanghai Jiao Tong University. My research interests lie in computer vision, deep learning, computer graphics and computational photography, with a focus on neural rendering, implicit neural representation, and 3D reconstruction.

## Education

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### SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY, ShanghaiTech University

Shanghai, China

#### PHD IN COMPUTER SCIENCE

Sept. 2017 - Jan. 2022

- **Research Areas:** Computer Vision, Deep Learning, Computer Graphics, Computational Photography
- **Advisor:** [Dr. Jingyi Yu](#) | [Lab](#)

### SCHOOL OF INFORMATION SCIENCE AND TECHNOLOGY, ShanghaiTech University

Shanghai, China

#### MASTER IN ELECTRICAL ENGINEERING (TRANSITION TO PHD)

Sept. 2014 - Sept. 2017

- **Research Areas:** Integrated Circuit
- **Advisor:** [Dr. Pingqiang Zhou](#) | [Lab](#)

### UM-SJTU JOINT INSTITUTE, Shanghai Jiao Tong University

Shanghai, China

#### BACHELOR DEGREE IN ELECTRICAL AND COMPUTER ENGINEERING, MINOR IN ANIMATION

Sept. 2010 - Aug. 2014

## Experience

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### InnoPeak Technology (a.k.a. OPPO US Research Center)

Palo Alto, CA

#### SENIOR RESEARCH ENGINEER

Aug. 2022 - Present

- Develop algorithms and systems for XR (AR/VR/MR) applications.

### Louisiana State University

Baton Rouge, LA

#### VISITING SCHOLAR / POSTDOCTORAL RESEARCHER

Oct. 2021 - Jul. 2022

- **Advisor:** [Dr. Jinwei Ye](#)
- Develop polarimetric imaging algorithms and systems for 3D reconstruction of objects with challenging surface reflectance properties.
- Develop light field imaging algorithms for 3D reconstruction of underwater objects and fluid flow.

### Google

San Francisco, CA (Remote)

#### RESEARCH INTERN

June 2020 - Dec. 2020

- Develop a multi-resolution implicit neural representation for 3D geometries, supporting numerous tasks including geometry auto-encoding/decoding/interpolation/completion.

### Louisiana State University

Baton Rouge, LA

#### VISITING SCHOLAR

July 2018 - Jan. 2019

- **Advisor:** [Dr. Jinwei Ye](#)
- Develop an uncalibrated near-field color photometric stereo algorithm and system for high-fidelity human face reconstruction from single image.

### Cadence

Shanghai, China

#### INTERN SOFTWARE ENGINEER

July 2016 - Sept. 2016

- Investigate routability-aware routing algorithms to reduce congestion and latency.

# Publications

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(\* denotes equal contribution, † denotes corresponding author)

## Conference

- [C1] **Spacetime Gaussian Feature Splatting for Real-Time Dynamic View Synthesis**  
Zhan Li, **Zhang Chen**<sup>†</sup>, Zhong Li<sup>†</sup>, Yi Xu  
**CVPR 2024**  
[\[project page\]](#) [\[paper\]](#) [\[code\]](#)
- [C2] **NeuRBF: A Neural Fields Representation with Adaptive Radial Basis Functions**  
**Zhang Chen**<sup>†</sup>, Zhong Li<sup>†</sup>, Liangchen Song, Lele Chen, Jingyi Yu, Junsong Yuan, Yi Xu  
**ICCV 2023 (Oral Presentation)**  
[\[project page\]](#) [\[paper\]](#) [\[code\]](#)
- [C3] **Relit-NeuLF: Efficient Relighting and Novel View Synthesis via Neural 4D Light Field**  
Zhong Li, Liangchen Song, **Zhang Chen**, Xiangyu Du, Lele Chen, Junsong Yuan, Yi Xu  
**ACM MM 2023**  
[\[project page\]](#) [\[paper\]](#) [\[code\]](#)
- [C4] **High Fidelity 3D Hand Shape Reconstruction via Scalable Graph Frequency Decomposition**  
Tianyu Luan, Yuanhao Zhai, Jingjing Meng, Zhong Li, **Zhang Chen**, Yi Xu, Junsong Yuan  
**CVPR 2023**  
[\[paper\]](#)
- [C5] **Multiresolution Deep Implicit Functions for 3D Shape Representation**  
**Zhang Chen**, Yinda Zhang, Kyle Genova, Sean Fanello, Sofien Bouaziz, Christian Häne, Ruofei Du, Cem Keskin, Thomas Funkhouser, Danhang Tang  
**ICCV 2021**  
[\[paper\]](#)
- [C6] **A Neural Rendering Framework for Free-Viewpoint Relighting**  
**Zhang Chen**, Anpei Chen, Guli Zhang, Chengyuan Wang, Yu Ji, Kiriakos N. Kutulakos, Jingyi Yu  
**CVPR 2020**  
[\[paper\]](#) [\[code\]](#)
- [C7] **3D Face Reconstruction Using Color Photometric Stereo with Uncalibrated Near Point Lights**  
**Zhang Chen**, Yu Ji, Mingyuan Zhou, Sing Bing Kang, Jingyi Yu  
**ICCP 2020**  
[\[paper\]](#)
- [C8] **An Optical Flow Based Multi-Object Tracking Approach Using Sequential Convex Programming**  
Qingwen Xu, Zhengpeng He, **Zhang Chen**, Yuning Jiang  
**ICARCV 2020**  
[\[paper\]](#)
- [C9] **Photo-Realistic Facial Details Synthesis From Single Image**  
Anpei Chen, **Zhang Chen**, Guli Zhang, Ziheng Zhang, Kenny Mitchell, Jingyi Yu  
**ICCV 2019 (Oral Presentation)**  
[\[project page\]](#) [\[paper\]](#) [\[code\]](#)
- [C10] **Deep Eyes: Binocular Depth-from-Focus on Focal Stack Pairs**  
Xinqing Guo\*, **Zhang Chen**\*, Siyuan Li, Yang Yang, Jingyi Yu  
**PRCV 2019 (Oral Presentation)**  
[\[paper\]](#)

[C11] ***Sparse Photometric 3D Face Reconstruction Guided by Morphable Models***

Xuan Cao, **Zhang Chen**, Anpei Chen, Xin Chen, Shiyong Li, Jingyi Yu

**CVPR 2018**

[\[paper\]](#)

[C12] ***How Secure Is Split Manufacturing in Preventing Hardware Trojan?***

**Zhang Chen**, Pingqiang Zhou, Tsung-Yi Ho, Yier Jin

**AsianHOST 2016**

[\[paper\]](#)

*Journal*

[J1] ***Polarimetric Helmholtz Stereopsis***

Yuqi Ding, Yu Ji, **Zhang Chen**, Mingyuan Zhou, Sing Bing Kang, Jinwei Ye

**IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2024**

[\[paper\]](#)

[J2] ***NeRFPlayer: A Streamable Dynamic Scene Representation with Decomposed Neural Radiance Fields***

Liangchen Song, Anpei Chen, Zhong Li, **Zhang Chen**, Lele Chen, Junsong Yuan, Yi Xu, Andreas Geiger

**IEEE Transactions on Visualization and Computer Graphics (TVCG) 2023 (Present at IEEE VR 2023)**

[\[project page\]](#) [\[paper\]](#)

[J3] ***Full-Volume 3D Fluid Flow Reconstruction with Light Field PIV***

Yuqi Ding, Zhong Li, **Zhang Chen**, Yu Ji, Jingyi Yu, Jinwei Ye

**IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2023**

[\[project page\]](#) [\[paper\]](#)

[J4] ***Light Field-Based Underwater 3D Reconstruction Via Angular Resampling***

Yuqi Ding, **Zhang Chen**, Yu Ji, Jingyi Yu, Jinwei Ye

**IEEE Transactions on Computational Imaging (TCI) 2023**

[\[paper\]](#)

[J5] ***SofGAN: A Portrait Image Generator with Dynamic Styling***

Anpei Chen\*, Ruiyang Liu\*, Ling Xie, **Zhang Chen**, Hao Su, Jingyi Yu

**ACM Transactions on Graphics (TOG) 2022 (Present at SIGGRAPH 2022)**

[\[project page\]](#) [\[paper\]](#) [\[code\]](#)

[J6] ***Deep Eyes: Joint Depth Inference Using Monocular and Binocular Cues***

**Zhang Chen\***, Xinqing Guo\*, Siyuan Li, Yang Yang, Jingyi Yu

**Neurocomputing 2021**

[\[paper\]](#) [\[data\]](#)

[J7] ***How Secure Is Split Manufacturing in Preventing Hardware Trojan?***

Yajun Yang, **Zhang Chen**, Yuan Liu, Tsung-Yi Ho, Yier Jin, Pingqiang Zhou

**ACM Transactions on Design Automation of Electronic Systems (TODAES) 2020**

[\[paper\]](#)

## Patent

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Jingyi Yu, **Zhang Chen**, Anpei Chen, Xin Chen, and Shiyong Li. "3D Human Face Reconstruction Method, System, Image Processing System and Storage Medium." CN111696146A. Mar. 14 2019.

## Skills

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**Programming Languages** Python, MATLAB, C/C++,  $\text{\LaTeX}$   
**Python/Machine Learning** PyTorch, TensorFlow, MXNet, OpenCV  
**Platform/Software** Linux, Windows, Git, Docker, conda, Agisoft Metashape

## Professional Activities

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### Conference Reviewer

SIGGRAPH (2024); CVPR (2022-2024); ICCV (2023); ECCV (2022, 2024); IEEE VR (2024); ACM MM (2023); 3DV (2022, 2024); IJCAI (2023-2024); WACV (2023-2024)

### Journal Reviewer

TPAMI; TIP

### Invited Talks

*Low-Cost Realistic 3D Face Reconstruction*. School of Electrical Engineering & Computer Science, Louisiana State University. September, 2018.

### Course Lecturing

*Programming Digital Media*. School of Electrical Engineering & Computer Science, Louisiana State University. Jan.-May, 2022.

## Honors & Awards

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- 2019 **Best Paper Nomination**, PRCV 2019
- 2016 **National Scholarship**, ShanghaiTech University
- 2016 **Outstanding Student**, ShanghaiTech University
- 2015 **Outstanding Student**, ShanghaiTech University
- 2014 **Outstanding Graduate**, Shanghai Jiao Tong University