Zhang **Chen**

United States

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About Me

I am a Research Engineer at Meta, working on codec avatar for digital human. 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

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

Meta   *United States*
Research Engineer   *Oct. 2024 - Present*
- Develop algorithms and systems for codec avatar (digital human).

InnoPeak Technology (a.k.a. OPPO US Research Center)   *Palo Alto, CA*
Senior Research Engineer   *Aug. 2022 - Oct. 2024*
- Develop algorithms and systems for XR (AR/VR/MR) applications.

Louisiana State University   *Baton Rouge, LA*
Visiting Research Scholar   *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 Research 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

(* denotes equal contribution, † denotes corresponding author)

Conference

[C1] ***PanoFree: Tuning-Free Holistic Multi-view Image Generation with Cross-view Self-Guidance***
Aoming Liu, Zhong Li†, **Zhang Chen**†, Nannan Li, Yi Xu, Bryan A. Plummer
ECCV 2024
[project page] [paper] [code]

[C2] ***Spacetime Gaussian Feature Splatting for Real-Time Dynamic View Synthesis***
Zhan Li, **Zhang Chen**†, Zhong Li†, Yi Xu
CVPR 2024
[project page] [paper] [code]

[C3] ***NeuRBF: A Neural Fields Representation with Adaptive Radial Basis Functions***
Zhang Chen†, Zhong Li†, Liangchen Song, Lele Chen, Jingyi Yu, Junsong Yuan, Yi Xu
ICCV 2023 (Oral Presentation)
[project page] [paper] [code]

[C4] ***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]

[C5] ***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]

[C6] ***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]

[C7] ***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]

[C8] ***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]

[C9] ***An Optical Flow Based Multi-Object Tracking Approach Using Sequential Convex Programming***
Qingwen Xu, Zhengpeng He, **Zhang Chen**, Yuning Jiang
ICARCV 2020
[paper]

[C10] ***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]

[C11] ***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]

[C12] ***Sparse Photometric 3D Face Reconstruction Guided by Morphable Models***
Xuan Cao, **Zhang Chen**, Anpei Chen, Xin Chen, Shiying Li, Jingyi Yu
CVPR 2018
[paper]

[C13] ***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

Yinda Zhang, Danhang Tang, Ruofei Du, **Zhang Chen**, Kyle Genova, Sofien Bouaziz, Thomas Allen Funkhouser, Sean Ryan Francesco Fanello, and Christian Haene. "Multiresolution Deep Implicit Functions for Three-Dimensional Shape Representation." WO2022227073A1. Apr. 30 2021.

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

Skills

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

Professional Activities

Conference Reviewer
SIGGRAPH (2024); CVPR (2022-2024); ICCV (2023); ECCV (2022, 2024); IEEE VR (2024); ACM MM (2023-2024); 3DV (2022, 2024-2025); AAAI (2025); IJCAI (2023-2024); WACV (2023-2025); ACCV (2024)

Journal Reviewer
TPAMI; TIP; TOSN

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

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