

BACKGROUND KEYWORDS

Computational Imaging, VR/AR Systems, Generative Methods, Metasurface Design, Hologram, Computer Graphics

EDUCATION

Princeton University

Doctor of Philosophy in Computer Science

Princeton, US
08/2023-06/2027

- Advised by Prof. Felix Heide at Princeton Computational Imaging Lab

Northwestern University

Doctor of Philosophy in Computer Science

Evanston, US
06/2022-08/2023

- Co-advised by Prof. Oliver Cossairt and Prof. Jack Tumblin at Computational Photography Lab

Master of Science in Computer Science, Thesis Track

01/2021-06/2022

Shandong University

Bachelor of Engineering in Software Engineering, *Summa Cum Laude*

Jinan, China
09/2015-06/2019

WORK EXPERIENCE

Princeton University

Research Assistant at Princeton Computational Imaging Lab

Princeton, US
12/2022-Current

- Develop large-FoV, full-spectrum, nano-photonics metalens array camera with diffusion-prior deconvolution algorithm.

Northwestern University

Course Instructor ([COMP_SCI 396: VR/AR Systems](#))

Evanston, US
06/2023-08/2023

- Initiate, create, and teach world first university-level VR/AR course that enables students build standalone VR/AR prototypes from scratch, including both VR graphics rendering pipeline and VR/AR hardware system building.

Research Assistant at Computational Photography Lab (NIH R34 Project)

03/2021-08/2023

- Design and build world first light field microscope that volumetrically images freely-moving zebrafish without disturbance
- Developed a differentiable framework for co-optimizing forward & backward design of light field microscope

Institute of Automation, Chinese Academy of Sciences

Neuro-Robotics Research Engineer

Beijing, China
07/2019-03/2021

- Designed a SNN/ANN hybrid robotics bodily-self model for NAO & iCub which can reproduce human rubber-hand illusion.

World Health Organization (WHO)

Machine Learning Data Specialist

Shanghai, China
03/2020-08/2021

- Developed an ensemble learning model for Risk Prediction of Cardiovascular Events among Patients with Type 2 Diabetes.

Sharing Tech Ltd.

Co-Founder & Ex-CEO

Jinan, China
12/2016-Current

- We investigate in NLP, knowledge graph, learning science, generative methods, and eye-tracking technology to develop tutorial system that targets to maximize users' learning speed of college-level knowledge.
- A-round with 167 employee on content creation, R&D, operations, and financing.

TEACHING

Course Instructor:

COMP_SCI 396: VR/AR Systems, Northwestern University

Summer 2023

Teaching Assistant:

COMP_SCI 351-1: Introduction to Computer Graphics, Northwestern University

Fall 2021, Spring 2022, Fall 2022

COMP_SCI 351-2: Intermediate-Level Computer Graphics, Northwestern University

Winter 2022

PUBLICATIONS

Thin On-Sensor Nanophotonic Array Cameras

Chakravarthula Praneeth*, **Jipeng Sun***, Xiao Li, Chenyang Lei, Gene Chou, Mario Bijelic, Johannes Froesch, Arka Majumdar, and Felix Heide

ACM Transactions On Graphics (2023)

Whole-Brain Imaging of Freely-Moving Zebrafish

Hasani Hamid*, **Jipeng Sun***, Shuyu I. Zhu, Qiangzhou Rong, Florian Willomitzer, Rumelo Amor, Gail McConnell, Oliver Cossairt, and Geoffrey J. Goodhill.

Frontiers in Neuroscience (2023)

Computational Framework for Light Field Microscopy Simulation and Optimization

Jipeng Sun, Rundi Zhou, Hamid Hasani, Florian Willomitzer, Jack Tumblin, Geoffrey J. Goodhill, and Oliver Cossairt

Optics Express (2023)

SW-DORT: Imaging Through Scattering Media Using Synthetic Wavelengths with DORT

Michael Lee, **Jipeng Sun**, Oliver Cossairt

Computational Optical Sensing and Imaging (2023)

High-Resolution Layer-Based 3D Biomedical Volume Synthesis with Guided Diffusion

Jipeng Sun, Isaiah Jones, Ruixiang Chai, Mahammed Kilic Talha, Robert Wong, Bryan Pardo, Florian Willomitzer, Oliver Cossairt, and Geoffrey J. Goodhill

IEEE ISBI (2024)