Tao Jin

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RESEARCH INTERESTS

Telepresence Systems (Textured Mesh, Point Cloud, NeRF, Gaussian Splat), Depth Sensing, Localization and Tracking, Real-Time 3D Reconstruction, 3D Video Streaming, Hybrid Rendering, AR/VR Systems, Embedded Systems

EDUCATION

Carnegie Mellon University, Pittsburgh, PA
Advisor: Anthony Rowe
Ph.D. in Electrical and Computer Engineering — Jan. 2022 – Present
M.S. in Electrical and Computer Engineering — Aug. 2020 – Dec. 2021

University of Washington, Seattle, WA — Sept. 2016 – Jun. 2020
Bachelor of Science in Electrical Engineering — Overall GPA: 3.74 — Major GPA 3.83

PUBLICATIONS

Implicit Surface Compression – with Good Old Discrete Cosine Transform and Motion Compensation
ACM Transactions on Graphics (SIGGRAPH), 2026
Tao Jin, Shengxi Wu, Tianshu Huang, Mallesham Dasari, Srinivasan Seshan, Anthony Rowe

SceneHub4D: A Dataset and Evaluation Framework for 6-DoF 4D VR Scenes
IEEE Transactions on Visualization and Computer Graphics (IEEE VR), 2026
Jaehong Kim, **Tao Jin**, Mallesham Dasari, Srinivasan Seshan, Anthony Rowe

LiVo: Toward Bandwidth-adaptive Fully-Immersive Volumetric Video Conferencing
Proceedings of the ACM on Networking (CoNEXT), 2025
Rajrup Ghosh, Christina Suyong Shin, Lei Zhang, Muyang Ye, **Tao Jin**, Harsha V. Madhyastha, Ravi Netravali, Antonio Ortega, Sanjay Rao, Anthony Rowe, Ramesh Govindan

OpenFLAME: Federated Visual Positioning System to Enable Large-Scale Augmented Reality Applications
IEEE International Symposium on Mixed and Augmented Reality (IEEE ISMAR), 2025
Sagar Bharadwaj, Harrison Williams, Luke Wang, Michael Liang, **Tao Jin**, Srinivasan Seshan, Anthony Rowe

DART: Implicit Doppler Tomography for Radar Novel View Synthesis
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2024, Oral
Tianshu Huang*, John Miller*, Akarsh Prabhakara, **Tao Jin**, Tarana Laroia, Zico Kolter, Anthony Rowe

MeshReduce: Scalable and Bandwidth Efficient 3D Scene Capture
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR), 2024
Tao Jin, Mallesham Dasari, Connor Smith, Kittipat Apicharttrisorn, Srinivasan Seshan, Anthony Rowe

StageAR: Markerless Mobile Phone Localization for AR in Live Events
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR), 2024
Tao Jin, Shengxi Wu, Mallesham Dasari, Kittipat Apicharttrisorn, Anthony Rowe

High Resolution Point Clouds from mmWave Radar
IEEE International Conference on Robotics and Automation (IEEE ICRA), 2023
Akarsh Prabhakara, **Tao Jin**, Arnav Das, Gantavya Bhatt, Lilly Kumari, Elahe Soltanaghai, Jeff Bilmes, Swarun Kumar, Anthony Rowe

DEMONSTRATIONS

MeshReduce: Split Rendering of Live 3D Scene for Virtual Teleportation
IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (IEEE VRW), 2024
Tao Jin, Edward Lu, Mallesham Dasari, Kittipat Apicharttrisorn, Srinivasan Seshan, Anthony Rowe

RadarHD: Demonstrating Lidar-like Point Clouds from mmWave Radar
ACM International Conference on Mobile Computing and Networking (ACM MobiCom), 2023
Akarsh Prabhakara, **Tao Jin**, Arnav Das, Gantavya Bhatt, Lilly Kumari, Elahe Soltanaghai, Jeff Bilmes, Swarun Kumar, Anthony Rowe

Live 3D Scene Capture for Virtual Teleportation
ACM Conference on Embedded Networked Sensor Systems (ACM SenSys), 2022
Tao Jin, Mallesham Dasari, Connor Smith, Kittipat Apicharttrisorn, Anthony Rowe, Srinivasan Seshan

WORK EXPERIENCE

Meta Reality Labs Redmond, WA
Research Scientist Intern, Host: Eric Penner May 2026 – Present

- Display Systems Research Team.

NVIDIA Santa Clara, CA and Remote
Software Engineering Intern, Host: Farbod Motlagh, Rafael Wiltz, Connor Smith, Tiffany Chen May 2025 – May 2026

- Working on real-time robotic teleoperation in the Spatial Computing and XR Team.
- Part of my work landed as a new release of nvblox package.

Magic Leap Remote
Software Engineering Intern, Host: Connor Smith, David Chu Jun. 2022 – Aug. 2022

- Worked on volumetric video capture streaming with fixed infra sensors and mobile AR headsets. Innovated on the capture-streaming architecture that resulted in a scalable and bandwidth-efficient volumetric capture system.

RESEARCH EXPERIENCE

Wireless Sensing and Embedded Systems Lab Jan. 2021 – Present
Carnegie Mellon University, Advisor: Anthony Rowe

Personal Robotics Lab Mar. 2019 – Mar. 2020
University of Washington, Advisor: Siddhartha Srinivasa

SKILLS

- **Programming Languages:** C/C++, CUDA, Metal, C#, Python, Java, System Verilog, JavaScript
- **Toolchains:** Vulkan, OpenGL, OpenCV, Open3D, OpenXR, PyTorch3D, FFmpeg, Unity, ROS

TEACHING EXPERIENCE

18-453: Introduction to XR Systems, Carnegie Mellon University, *Fall 2023, Fall 2025*
Instructor: Anthony Rowe, Aswin C. Sankaranarayanan

18-449: Distributed Embedded Systems, Carnegie Mellon University, *Spring 2022*
Instructor: Anthony Rowe

18-500: ECE Design Experience, Carnegie Mellon University, *Spring 2021, Fall 2021*
Instructor: Tamal Mukherjee, Gary Fedder, Hyong Kim

EE-474: Intro to Embedded Systems, University of Washington, *Summer 2019, Fall 2019, Spring 2020, Fall 2020*
Instructor: Rania Hussein

SELECTED COURSEWORK

- Computer Vision
- Computer Graphics
- Computational Photography
- Simultaneous Localization and Mapping
- Real-time Embedded Systems
- Advanced Cloud Computing

REVIEWING

- IEEE VR, 2025 – 2026
- IEEE ISMAR, 2024 – 2026
- ACM MM, 2025 – 2026
- ACM CHI, 2025
- IEEE Transactions on Computers, 2024

AWARDS

- **Carnegie Institute of Technology Dean's Fellowship**, 2022 – 2023
- **Best Demo Award**, CONIX Research Center, 2021, 2022
- **CMU CyLab Contribution Recognition**, Nov. 2022