

# Guodong Chen

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## RESEARCH INTERESTS

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My primary research interests include Volumetric Representation, Volumetric Video Streaming, Augmented and Virtual Reality (AR/VR) Systems, and Computer Networks. My current work focuses on hybrid mesh and 3D Gaussian Splatting representations, 3D mesh compression, and spatial/volumetric video streaming. I am also interested in AI-driven techniques for 3D content compression and streaming.

## EDUCATION BACKGROUND

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**Northeastern University, Boston, US**

Sep. 2024 - now

Ph.D. Computer Engineering GPA: 4.00/4.00

GPA: 4.00/4.00

**Nanjing Normal University, Nanjing, China**

Sep. 2020 - Jun. 2024

B.S.E Computer Science and Technology

GPA: 4.03/5.0 (90.27/100)

## PUBLICATIONS

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**Guodong Chen**, Libor Váša, Amrita Mazumdar, and Mallesham Dasari. “TSMC: Time-varying Scene Mesh Compression.” *In Proceedings of the Special Interest Group on Computer Graphics and Interactive Techniques Conference Conference Papers (SIGGRAPH)*. 2026.

Yuan-Chun Sun, **Guodong Chen**, Sam Ziaie Kondori, Mallesham Dasari, and Cheng-Hsin Hsu. “LMG: Efficient Streaming of Layered Mesh–Gaussian 3D Scenes.” *The 17th ACM Multimedia Systems Conference (MMSys)*, 2026.

**Guodong Chen**, Filip Háchá, Libor Váša, and Mallesham Dasari. “TVMC: Time-Varying Mesh Compression Using Volume-Tracked Reference Meshes.” *The 16th ACM Multimedia Systems Conference (MMSys)*, 2025.

**Guodong Chen\***, Sizhe Wang\*, Jacob Chakareski, Dimitrios Koutsonikolas, and Mallesham Dasari. “Spatial Video Streaming on XR Headsets.” *The 26th International Workshop on Mobile Computing Systems and Applications (Hot-Mobile)*, 2025.

Zhewen Yang\*, **Guodong Chen\***, Mayank Chadha, Barath Balamurugan, and Mallesham Dasari. “Remote Human-Robot Collaboration in XR.” *The 26th International Workshop on Mobile Computing Systems and Applications (Hot-Mobile)*, 2025.

Izadimehr, MohammadHossein, Milad Ghanbari, **Guodong Chen**, Wei Zhou, Xiaoshuai Hao, Mallesham Dasari, Christian Timmerer, and Hadi Amirpour. “SVD: Spatial Video Dataset.” *In Proceedings of the 33rd ACM International Conference on Multimedia (MM)*, 2025.

## PREPRINTS

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**Guodong Chen**, Huanshuo Dong, and Mallesham Dasari. “N4MC: Neural 4D Mesh Compression.” *arXiv preprint arXiv:2602.20312*, 2026. (under review)

## HONORS & AWARDS

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Best Reproducible Paper Award, ACM Multimedia Systems Conference (MMSys) 2025

Best Demo Award, ACM HotMobile 2025

ACM Travel Grant, ACM Multimedia Systems Conference (MMSys) 2025

ACM Travel Grant, ACM HotMobile 2025

Meritorious Winner, Mathematical Contest in Modeling May 2023

First Prize, Feng Ruer Scholarship, Nanjing Normal University Apr 2023

Technology Star, Nanjing Normal University Mar 2023

First Prize, Excellent Student Scholarship, Nanjing Normal University 2023

## RESEARCH EXPERIENCES

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### Research Intern at ATG Group

Sep. 2025 - Dec. 2025

Dolby Laboratories, Manager: Guan-Ming Su

Atlanta, GA

- Collaborated with team members to optimize rendering quality for Gaussian Splatting on complex multi-part articulated objects.
- Modified the Gaussian Splats rasterizer to support gradient backpropagation for camera poses and integrated an MLP-based global pose refinement module to mitigate camera pose inaccuracies from SfM pipelines such as VGGT and COLMAP.
- Designed a built-in label segmentation algorithm combining K-means clustering with label-growing for more reliable part segmentation.
- Achieved notable rendering quality improvements, increasing SSIM, PSNR, and LPIPS while significantly reducing blur and deformation artifacts on real-captured articulated object datasets.

### Research Assistant at SINRG Group

Nov. 2023 - Present

Northeastern University, Supervised by Prof. Malleham Dasari

Boston, MA

- Designed a dynamic hybrid volumetric representation combining mesh geometry and bounded 3D Gaussian splats as texture.
- Obtained preliminary results in streaming spatial videos using iPhones and Apple Vision Pro XR headsets; accepted to *2025 HotMobile*.
- Evaluated advanced spatial video codecs that support MV-HEVC videos, including x265 4.0, FFmpeg 7.1, Spatial tool, and AVFoundation; analyzed payload difference between layers of spatial videos.
- Designed and implemented a novel time-varying mesh compression method, TVMC, utilizing volume-tracked reference meshes; accepted to *2025 ACM MMSys*.

### Research Assistant at DTXR Group

May. 2021 - Sep. 2022

Nanjing Normal University, Supervised by Prof. Richen Liu

Nanjing, China

- Developed an immersive virtual reality platform for medical diagnostics by converting computerized inspection reports into 3D medical volume data using the Unity engine.
- Optimized and deployed ray-casting algorithm for immersive 3D environment medical volumetric data interpretation.
- Implemented a track seeding algorithm based on continuous scale space theory to facilitate 2D to 3D imaging migration.
- Implemented advanced gesture-recognition technology and touchless control to manipulate angles and locations of volumetric medical data for visualization on Oculus Quest 2.

## TECHNICAL SKILLS

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**Programming:** Python, C/C++, C#  
**Tools:** Codex, Claude Code, Git, Unity,  $\LaTeX$   
**Languages:** Bilingual in English and Chinese