Mallesham Dasari

Curriculum Vitae

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Current Employment

Jan 2024 - Present **Assistant Professor**, Northeastern University, Boston, MA, USA.
Department of Electrical and Computer Engineering
Affiliate: Institute for the Wireless Internet of Things
Director: Spatial Intelligence Research Group (sinrg.org)

Education & Training

2022 - 2023 **Postdoctoral Researcher**, Carnegie Mellon University, Pittsburgh, PA, USA.
Advisor (s): Anthony Rowe, Srinivasan Seshan

2016 - 2021 **PhD**, *Computer Science*, Stony Brook University, Stony Brook, NY, USA.
Advisor: Samir R. Das

2008 - 2012 **BE**, *Computer Science*, Osmania University, Hyderabad, India.

Selected Honors and Awards

2025 Best reproducible paper award at ACM MMSys
2025 Best demo award at ACM HotMobile
2024 Distinguished technical program committee member award: ACM MMSys Conference.
2024 Best research poster at ACM MobiCom
2022 Best demo award at DARPA SRC center (CONIX) workshop at Carnegie Mellon University.
2021 Best presentation award at ACM MobiCom S3 Workshop.
2021 Best paper award at IEEE International Symposium on Multimedia (ISM).
2021 ACM SIGMOBILE community engagement award ($10,000).
2020 Finalist of three minute (3MT) presentation of thesis competition at Stony Brook University.
2019 Jerrold L. Stein emerging leader award at Stony Brook University for governing student body.
2017 Selected for Student Research Competition (SRC) at ACM SIGCOMM conference.
2015 Innovation award from Uurmi Systems Pvt. Ltd for x264 video codec hardware acceleration.
2012 Ministry of Human Resource Development (MHRD) scholarship for pursuing MTech degree.
2008 Osmania University scholarship with full college tuition waiver.
2008 High school valedictorian of student body.

Industry Experience

05/20–12/21 **Research Intern**, *NEC Labs*, Princeton, NJ, USA.
Advisor: Karthikeyan Sundaresan
Topic: Multi-User Localization and Tracking using Visual and Wireless (RF) Sensing.

07/19–09/19 **Research Intern**, *Bell Labs*, Cambridge, UK.
Advisor: Fahim Kawsar
Topic: Urban City Sensing using WiFi Management Frames on Wearable Devices.

05/18–08/18 **Research Intern**, *AT&T Labs*, Bedminister, NJ, USA.
Advisor: Vijay Gopalakrishnan
Topic: Elastic Scaling of Virtual Network Functions in LTE/5G Cellular Networks.

05/17–04/18 **Research Intern**, *HP Labs*, Palo Alto, CA, USA.
Advisor: Kyu-Han Kim
Topic: Data-driven Video Quality Optimization in Enterprise WiFi.

06/14–12/15 **Senior Software Engineer**, *Uurmi Systems Pvt. Ltd*, Hyderabad, India.
Topic: Development of Network Stack (MAC and Routing Protocols) in Embedded Linux Kernel.

05/12–05/14 **Software Engineer**, *Uurmi Systems Pvt. Ltd*, Hyderabad, India.
Topic: Hardware Acceleration of H.264 Video Codec in DSP Processors.

01/12–05/12 **Engineering Intern**, *Uurmi Systems Pvt. Ltd*, Hyderabad, India.
Topic: Designing Fast Motion Estimation Algorithms for H.264 Video Compression.

05/11–08/11 **Software Development Intern**, *IDRBT*, Hyderabad, India.
Topic: Computation Offloading of Banking Applications on Distributed Grid Computing Servers.

Teaching

Instructor EECE5698: **Networked XR Systems**, Northeastern University, Fall 2024 (trace score 4.8), Spring 2024 (trace score 4.8).
EECE 2540: **Fundamentals of Computer Networks**, Northeastern University, Fall 2024 (trace score 3.5).

Co-Instructor CSE 570: **Wireless and Mobile Networks**, Stony Brook University, Spring 2020.
Course content: Fundamental Principles of Wireless and Mobile Computing Technologies.

Instructor WISE 380: **Women in Science & Engineering**, Stony Brook University, Spring & Fall 2019.

Teaching Assistant CSE 381: **Computer Game Programming**, Stony Brook University, Spring 2017.
CSE 101: **Introduction to Computer Science**, Stony Brook University, Fall 2016.

Journal Publications

[J8] 4DGStream: Variable Bitrate Dynamic Gaussian Splatting Streaming
Zhicheng Liang, Dayou Zhang, Linfeng Shen, Miao Zhang, Jian Zhang, Bin Ju, **Mallesham Dasari**, Fangxin Wang, Jiangchuan Liu
IEEE Transactions on Multimedia, 2025

[J7] Grasp-HGN: Grasping the Unexpected
Mehrshad Zandigohar, **Mallesham Dasari**, Gunar Schirner
ACM Transactions on Embedded Computing Systems, 2025

[J6] Edge-based physical asset and digital twin virtualization framework to support cognitive digital twins
Rolando Herrero, **Mallesham Dasari**
Journal of Internet of Things, 2025

[J5] CleAR: Robust Context-Guided Generative Lighting Estimation for Mobile Augmented Reality
Yiqin Zhao, **Mallesham Dasari**, Tian Guo
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (ACM IMWUT), 2025

[J4] Paykan: Virtual reality gaming as a therapeutic tool for target panic disorder
Hesam Sakian Mohamadi, Faraz Bakhshi, Yoones A Sekhavat, **Mallesham Dasari**, Kazem Gobadi Ansaroudi, Mahdi Ahmadzadeh Haji Alilou
Journal of Entertainment Computing, 2025

[J3] Fumos: Neural Compression and Progressive Refinement for Continuous Point Cloud Video Streaming
Junhua Liu, Zhicheng Liang, **Mallesham Dasari**, Fangxin Wang
IEEE Transactions on Visualization and Computer Graphics (IEEE TVCG), 2024

[J2] RoVAR: Robust Multi-Agent Tracking through Dual-Layer Diversity in Visual and RF Sensing
Mallesham Dasari, Ramanujan K. Seshadri, Karthikeyan Sundaresan, Samir R. Das
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (ACM IMWUT), 2023

[J1] The City as a Personal Assistant: Hyper-local Conversational Agent for Spatio-temporal Events
Utku Gunay Acer, Marc Van Den Broek, Chulhong Min, **Mallesham Dasari**, Fahim Kawsar
Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (ACM IMWUT), 2022

Conference Publications

[C20] XRFab:Immersive Cleanroom Training with Digital Twins and XR for Semiconductor Manufacturing
Mayank Chadha, Barath Balamurugan, Guodong Chen, Zhewen Yang, Alok Mishra, **Mallesham Dasari**
IEEE International Symposium on Metaverse (ISMEV), 2025

[C19] SVD: Spatial Video Dataset
MH Izadimehr, Milad Ghanbari, Guodong Chen, Wei Zhou, Xiaoshuai Hao, **Mallesham Dasari**, Christian Timmerer, Hadi Amirpour
ACM International Conference on Multimedia (ACM MM), 2025

[C18] TVMC: Time-Varying Mesh Compression with Volume-Tracked Reference Meshes
Guodong Chen, Filip Hacha, Libor Vasa, **Mallesham Dasari**
ACM International Conference on Multimedia Systems (ACM MMSys), 2025

[C17] Fumos: Neural Compression and Progressive Refinement for Continuous Point Cloud Video Streaming
Junhua Liu, Zhicheng Liang, **Mallesham Dasari**, Fangxin Wang
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR), 2024

[C16] StageAR: Markerless Mobile Phone Localization for AR in Live Events
Tao Jin, Shengxi Wu, Patrick Apicharttrisorn, **Mallesham Dasari**, Anthony Rowe
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR), 2024

[C15] MeshReduce: An Internet Accessible Scene Capture for 3D Telepresence
Mallesham Dasari, Tao Jin, Connor Smith, Kittipat Apicharttrisorn, Anthony Rowe, Srinivasan Seshan
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR), 2024

[C14] RenderFusion: Balancing Local and Remote Rendering for Interactive 3D Scenes
Edward Lu, Sagar Bharadwaj, **Mallesham Dasari**, Connor Smith, Anthony Rowe, Srinivasan Seshan
IEEE International Symposium on Mixed and Augmented Reality (IEEE ISMAR), 2023

[C13] Scaling VR Video Conferencing
Mallesham Dasari, Edward Lu, Mike Farb, Nuno Pereira, Ivan Liang, Anthony Rowe
IEEE Conference on Virtual Reality and 3D User Interfaces (IEEE VR), 2023

[C12] Cyclops: An FSO-based Wireless Link for VR Headsets
Himanshu Gupta, Max Curran, Jon Longtin, Torin Rockwell, Kai Zheng, **Mallesham Dasari**
ACM Special Interest Group on Data Communication (ACM SIGCOMM), 2022

[C11] Swift: Adaptive Video Streaming Using Layered Neural Codecs
Mallesham Dasari, Kumara Kahatapitiya, Samir R. Das, Aruna Balasubramanian, Dimitris Samaras
USENIX Symposium on Networked Systems Design and Implementation (USENIX NSDI), 2022

[C10] Internet Video Delivery using Neural Video Codecs
Mallesham Dasari, Samir R. Das
ACM International Conference on Mobile Computing and Networking – Student Workshop (ACM MobiCom S3), 2021

[C9] dcSR: Practical Video Quality Enhancement Using Data-Centric Super Resolution
Duin Baek, **Mallesham Dasari**, Samir R. Das, Jihoon Ryoo
ACM International Conference on Emerging Networking Experiments and Technologies (ACM CoNEXT), 2021

[C8] L3BOU: Optimized Super-Resolution Backhaul for 360-Degree Video Streaming
Ayush Kumar, John Murray, **Mallesham Dasari**, Michael Zink, Klara Nahrstedt
IEEE International Symposium on Multimedia (IEEE ISM), 2021

[C7] PARSEC: Streaming 360° Videos using Super-Resolution
Mallesham Dasari, Arani Bhattacharya, Santiago Vargas, Pranjal Sahu, Aruna Balasubramanian, Samir R. Das
IEEE International Conference on Computer Communications (IEEE INFOCOM), 2020

[C6] Advancing User QoE in 360-Degree Video Streaming
Sohee Park, Arani Bhattacharya, Zhibo Yang, **Mallesham Dasari**, Samir R. Das, Dimitris Samaras
IFIP Networking Conference (IFIP Networking), 2019

[C5] Multiple Transmitter Localization under Time-Skewed Observations
Mohammad Ghaderibaneh, Mallesham Dasari, Himanshu Gupta
IEEE International Symposium on Dynamic Spectrum Access Networks (IEEE DySPAN), 2019

[C4] Spectrum Protection from Micro Signals with Distributed Spectrum Patrolling
Mallesham Dasari, Mohammad Bershgal Atique, Arani Bhattacharya, Samir R. Das
Passive and Active Measurement Conference (PAM), 2019

[C3] Impact of Device Performance on Mobile Internet QoE
Mallesham Dasari, Arani Bhattacharya, Santiago Vargas, Aruna Balasubramanian, Samir R. Das, Mike Ferdman
ACM Internet Measurement Conference (ACM IMC), 2018

[C2] Scalable Ground-truth Annotation for Video QoE Modeling in Enterprise WiFi
Mallesham Dasari, Christina Vlachou, Shruti Sandhya, Kyu-Han Kim, Samir R. Das
IEEE/ACM International Symposium on Quality of Service (IWQoS), 2018

[C1] Understanding User Perceived Video Quality using Multipath TCP
Sohee Kim Park, Arani Bhattacharya, **Mallesham Dasari**, Samir R. Das
IEEE Sarnoff Symposium, 2018

Workshop Publications

[W3] XRAI Care: A Systems Perspective on Remote Assistance for Older Adults with XR and AI
Mallesham Dasari, Vyas Sekar
ACM CHI Workshop on Aging in Place, 2025

[W2] Spatial Video Streaming on Apple Vision Pro XR Headset
Guodong Chen, Sizhe Wang, Dimitrios Koustonikolous, Jacob Chakareski, **Mallesham Dasari**
ACM Workshop on Mobile Computing Systems and Applications (HotMobile), 2025

[W1] In-operando Tracking and Prediction of Transition in Material System Using LSTM
Pranjal Sahu, Dantong Yu, Kevin Yager, **Mallesham Dasari**, Hong Qin
AI-Science'18: 1st International Workshop on Autonomous Infrastructure for Science, 2018

Demos

[D2] Demo: Remote Human-Robot Collaboration in XR
Zhewen Yang, Guodong Chen, Mayank Agarwal, Barath Balamurugan, **Mallesham Dasari**
ACM Workshop on Mobile Computing Systems and Applications (HotMobile), Demo Track, 2025 *Best Demo Award*

[D1] MeshReduce: Split Rendering of Live 3D Scene for Virtual Teleportation
Tao Jin, Edward Lu, **Mallesham Dasari**, Kittipat Apicharttrisorn, Srinivasan Seshan, Anthony Rowe
IEEE VR Workshops (IEEE VRW): Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops, 2024, pp. 1186–1189

Posters

[P2] Capacitive Sensing-based Eye Tracking for XR Glasses
Aidan Hanson, Amr Kassab, **Mallesham Dasari**
ACM International Conference on Mobile Computing and Networking (ACM MobiCom), Poster Session, 2024 *SRC Award – 2nd Place Winner*

[P1] Demystifying Hardware Bottlenecks in Mobile Web Quality of Experience
Mallesham Dasari, Conor Kelton, Javad Nejati, Aruna Balasubramanian, Samir R. Das
ACM SIGCOMM Posters and Demos, 2017

Thesis

2021 Improving the Quality of Experience in Multimedia Systems, 2021

Patents

2019 Estimating Video Quality of Experience
Mallesham Dasari, Shruti Sandhya, Christina Vlachou, Kyu-Han Kim; US Patent 15884857.

2018 Systems and Methods for Motion Estimation for Coding a Video Sequence
Mallesham Dasari, Himanshu Sindwal, Naresh Vattikuti, SRV Maddela; US Patent 9930357.

Professional Activities

Co-Founder & Steering Committee Chair ACM Emerging Multimedia Systems (EMS) Workshop, 2023 – Present

Associate Editor IEEE Transactions on Circuits and Systems for Video Technology, 2025, 2026

Editorial Board Member ScienceDirect International Journal on Signal Processing: Image Communication, 2025-Present

Guest Editor ACM Transactions on Sensor Networks - Special Issue on Immersive Computing, 2025

General Chair NSF Workshop on Networking and Systems Challenges in Immersive Computing, 2025

Technical Program Co-Chair
ACM Immersive Computing Workshop at ACM MobiCom Conference, 2024
ACM EMS Workshop at SIGCOMM Conference, 2023
IEEE WoWMoM PhD Forum, 2023
ACM SIGMOBILE Community Engagement Program Seminar, 2022
ACM SMS Workshop at MobiSys Conference, 2021
ACM S3 Workshop at MobiCom Conference, 2019
Graduate Student Research Conference at Stony Brook University, 2019

Technical Program Committee Member	USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2025 ACM Conference on Embedded Artificial Intelligence and Sensing Systems (SenSys), 2025 IEEE International Conference on Virtual Reality (VR), 2025 IEEE International Conference on Communication Systems & Networks, 2025, 2024 ACM International Conference on Conference on Emerging Networking EXperiments and Technologies (CoNEXT), 2025, 2024, 2023 ACM Internet Measurement Conference (IMC), 2025, 2024, 2023, 2022 ACM Multimedia Systems Conference (MMSys), 2025, 2024, 2023, 2022 ACM NOSSDAV Workshop, 2025, 2024, 2023, 2021 USENIX Annual Technical Conference (ATC), 2024 IEEE International Conference on Distributed Computing Systems (ICDCS), 2024 ACM SIGCOMM Conference Artifact Evaluations, 2023 ACM DistributedML Workshop, 2023, 2022
Reviewer	ACM/IEEE Transactions on Networking, 2024, 2023 IEEE Transactions on Multimedia, 2024 IEEE Communications Letters, 2024 ACM Multimedia Conference (MM), 2024, 2023, 2022, 2021 ACM Journal on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), 2022 ACM Transactions on Sensor Networks, 2020 IEEE Pervasive Computing, 2022 IEEE Internet Computing, 2019
Publicity Chair	IEEE Pervasive Computing, 2023, 2022

Academic Leadership

2020	Acting President of Graduate Student Organization, Stony Brook University. Responsibility: Leading an organization of ≈10,000 graduate students with $625,000 funds across more than 50 departments on campus. **Key achievement**: Played a significant role in eliminating fees for all full-time PhD students.
2019	Elected Vice President of Graduate Student Organization, Stony Brook University. Responsibility: Managing student leaders from different departments, organizing events and initiating new activities for graduate students. **Key accomplishment**: Created a special interest group on diversity, equity, and inclusion (SIGDEI) to tackle the issues faced by underrepresented students.
2018	**Founding** President of CS Graduate Student Organization, Stony Brook University.

PhD Student Advising

Majd Khalaf	PhD Student at Northeastern University. Thesis: Building XR and AI Glasses. Fall 2025 - Present
Zhewen Yang	PhD Student at Northeastern University. Thesis: XR Media Streaming. Spring 2025 - Present
Guodong Chen	PhD Student at Northeastern University. Thesis: XR Media Compression. Fall 2024 - Present

MS Thesis Committee

Sizhe Wang	MS Thesis Student at Northeastern University. Thesis: Cellular vs. LEO Satellite Networks on the Wheels in Non-Continental US. Fall 2024

Nathan Augenbraun — MS Thesis Student at Northeastern University.
Thesis: Investigating Communication aware Pruning of CNNs for Distributed Inference over a Network.
Spring 2025

Mentorship Experience

2025 — Mayank Chadha - MS Student at Northeastern University.
Project: Human Robot Collaboration in XR.

Barath Balamurugan - MS Student at Northeastern University.
Project: XRFab - Workforce Training in XR for Semiconductor Manufacturing.

2024 — Amr Kassab - PhD Student at Northeastern University.
Project: Capacitive Sensing-based Eye Tracking for XR Devices.

Aniket Fasate - MS Student at Northeastern University.
Project: Capacitive Sensing based Eye Tracking for XR Devices.

Yiqin Zhao - PhD Student at WPI.
Project: Lighting Estimation for Mobile AR Environments.

2022 & 23 — Edward Lu - 1st Year PhD Student at Carnegie Mellon University.
Project: Hybrid Rendering of Massive Mesh Models for Augmented Reality.

Tao Jin - 2nd Year PhD Student at Carnegie Mellon University.
Project: Volumetric Video Streaming.

Syeda Sheherbano Rizvi - MS Student at Carnegie Mellon University.
Project: Scaling VR Video Conferencing.

OurCS Mentor: Taught Computer Science Research Methodology to Undergraduate Women Students at a two-day Workshop at Carnegie Mellon University.

2021 — Scott Burgert & Dylan Scott - Undergraduate Students at Stony Brook University.
Project: Multiplayer AR Gaming using ARCore Tracking Engine.

Nihal Goalla - MS Student at Stony Brook University.
Project: Video Streaming using Neural Codecs.

Ayush Sarkar & John Murray - MS Students at UIUC and UMASS Amherst.
Project: 360-degree Video Streaming using Super-Resolution Backhaul.

2020 & Before — Gargi Saha, Caeley Kardell, Rohit Bhal, Vipul Ghandi, Arpita Abrol, Rhea Manjrekar, Binayak Das, Aakash Deep - MS & UG Students at Stony Brook University.

Seminars and Talks

4/2025 — TVMC: Time-Varying Mesh Compression, invited talk at UIUC IMMERSE Symposium.
3/2025 — TVMC: Time-Varying Mesh Compression, invited talk at NSF Workshop.
2/2025 — Designing Networked Systems for Spatial Intelligence, IIT Madras, India.
2/2025 — Designing Networked Systems for Spatial Intelligence, IIT Delhi, India.
2/2025 — Designing Networked Systems for Spatial Intelligence, IIIT Delhi, India.
2/2025 — Designing Networked Systems for Spatial Intelligence, IIT Hyderabad, India.
4/2023 — Designing Networked Systems for Immersive Experiences, UIUC.
3/2023 — Designing Networked Systems for Immersive Experiences, Arizona State University.
2/2023 — Designing Networked Systems for Immersive Experiences, Northeastern University.
11/2022 — Networking Challenges in the Pursuit of Immersive Telepresence, Northeastern University.
11/2022 — Networking Challenges in the Pursuit of Immersive Telepresence, Boston University.
04/2022 — Adaptive Video Streaming using Neural Video Codecs, University of Texas Austin.
04/2022 — Adaptive Video Streaming with Layered Neural Codecs, USENIX NSDI Conference, Seattle.

03/2022 Recent Advances in Internet Video Delivery, Arizona State University.
10/2021 Video Streaming using Neural Video Codecs, ACM S3 Workshop at MobiCom Conference.
02/2021 Deep Video Compression, Graduate Research Day at Stony Brook University.
04/2020 Streaming 360-Degree Videos using Super-Resolution, IEEE INFOCOM Conference.
03/2019 Spectrum Protection from Micro Transmissions, PAM Conference, Patagonia, Chile.
11/2018 Impact of Device Performance on Mobile Internet QoE, ACM IMC Conference, Boston.
06/2018 Scalable Ground-truth Annotation in Video QoE Modeling, IWQoS Workshop, Banff, Canada.
18/2017 Demystifying Hardware Bottlenecks in Web QoE, ACM SIGCOMM Posters Session, UCLA.
03/2016 Introduction to Computer Programming, Google IgniteCS Program for Middle School Students.
05/2015 Industry Speaker: Challenges of Mobile Adhoc Networks, IEEE ICACCI, Kerala, India.