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

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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
2012 - 2014	**MTech**, *Computer Science*, Osmania University, Hyderabad, India. Advisor: Shyamala Kattula
2008 - 2012	**BE**, *Computer Science*, Osmania University, Hyderabad, India.

Proposals under submission

NSF CNS Core Medium	PI, "Bringing 3D Telepresence to the Internet", in collaboration with CMU (Northeastern share $400,000)
NSF RITEL	co-PI, "Adaptive Immersive Environments for Inclusive and Enhanced Learning", $900,000 (in collaboration with Wallace Lages, Leanne Chukowskie, Brook Welles, and me; all from Northeastern)
DoE EXPRESS Pre-Proposal	PI, "Advanced Data Visualization in Extended Reality using High Performance Edge Connectivity", $500,000 (in collaboration with Josep Jornet)
Industry Grants	Amazon, SONY, EPIC Megagrants, MathWorks Microgrants

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Teaching

Instructor	EECE5698: **Networked XR Systems**, Northeastern University, Spring 2024
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.

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.

PUBLICATIONS

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

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

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

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

2022 Cyclops: An FSO-based Wireless Link for VR Headsets
Himanshu Gupta, Max Curran, Jon Longtin, Torin Rockwell, Kai Zheng, **Mallesham Dasari**
ACM SIGCOMM (Conference on Data Communications).

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

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

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

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

2021 L3BOU: Low Latency, Low Bandwidth, Optimized Super-Resolution Backhaul for 360-Degree
Video Streaming
Ayush Kumar, John Murray, **Mallesham Dasari**, Michael Zink, Klara Nahrstedt
IEEE ISM (Conference on Multimedia).

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

2019   Advancing User Quality of Experience in 360-Degree Video Streaming
Sohee Park, Arani Bhattacharya, Zhibo Yang, **Mallesham Dasari**, Samir R. Das, Dimitris Samaras
IFIP Networking (Conference on Networking).

2019   Multiple transmitter localization under time-skewed observations
Mohammad Ghaderibaneh, Mallesham Dasari, Himanshu Gupta
IEEE DySPAN (Conference on Dynamic Spectrum Access Networks).

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

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

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

2018   Understanding User Perceived Video Quality using Multipath TCP over Wireless Network
Sohee Kim Park, Arani Bhattacharya, **Mallesham Dasari**, Samir R. Das
IEEE Sarnoff (Sarnoff Symposium).

2017   Poster: 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.

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

2025   Technical Program Committee: USENIX NSDI

2024   Technical Program Committee: ACM CoNEXT, ACM IMC, ACM MMSys, ACM MM, ACM NOSSDAV, USENIX ATC, IEEE ICDCS, IEEE Comsnets
Reviewer: ACM Transactions of Multimedia
Guest Editor: Special Issue on Immersive Computing - Transactions of Sensor Networks

2023   Technical Program Committee: ACM CoNEXT, ACM IMC, ACM MMSys, ACM MM
Reviewer: USENIX NSDI, ACM/IEEE Transactions on Networking
PhD Forum Co-Chair: IEEE WoWMoM

2022   Technical Program Committee: ACM IMC, ACM MMSys
Reviewer: ACM CoNEXT, ACM MM, ACM IMWUT/UbiComp
Artifact Evaluation Committee: ACM SIGCOMM
Social Media Chair: IEEE Pervasive Computing

2021   Reviewer: ACM MM, ACM IMWUT/UbiComp
Program Co-Chair: ACM SMS MobiSys Workshop,
Organizer: ACM SIGMOBILE Community Engagement Program (Granted $10,000 Award)

2020 & Before   Reviewer: ACM Transactions on Sensor Networks, ACM/IEEE Transactions on Networking, IEEE Transactions on Mobile Computing, IEEE Pervasive Computing, IEEE Internet Computing
Program Co-Chair: S3 Workshop ACM MobiCom, Graduate Research Conference at SBU
Artifact Evaluation Committee: ACM SIGCOMM

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.

Mentorship Experience

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

4/2023   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.

Selected Honors and Scholarships

2022	Nominated for ACM SIGMM outstanding PhD thesis award.
2022	Best demo award at CONIX an SRC center review 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).
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 to participate in 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.
2008	Osmania University scholarship with full college tuition waiver.
2008	High school valedictorian of student body.