

## Education

- 2024–Present **PhD in Computer Science**, *Peking University*, Beijing, China  
Advisor: Prof. He Wang
- 2017–2021 **B.E. in Electronics and Instrumentation Engineering**, *Birla Institute of Technology and Science, Pilani (BITS Pilani)*, Hyderabad, India

## Publications

- [6] Jiazhao Zhang\*, **Nandiraju Gireesh\***, Jilong Wang, Xiaomeng Fang, Chaoyi Xu, Weiguang Chen, Liu Dai, He Wang. *GAMMA: Graspability-Aware Mobile MANipulation Policy Learning based on Online Grasping Pose Fusion*. In IEEE International Conference on Robotics and Automation (**ICRA** 2024) 📄
- [5] **Nandiraju Gireesh\***, Ayush Agrawal\*, Ahana Dutta\*, Snehasis Banerjee, Mohan Sridharan, Brojeshwar Bhowmick, Madhava Krishna. *Sequence Agnostic Multi-Object Navigation*. In IEEE International Conference on Robotics and Automation (**ICRA** 2023) 📄
- [4] **Nandiraju Gireesh**, D. A. Sasi Kiran, Snehasis Banerjee, Mohan Sridharan, Brojeshwar Bhowmick, Madhava Krishna. *Object Goal Navigation using Data Regularized Q-Learning*. In 18th IEEE International Conference on Automation Science and Engineering (**IEEE CASE** 2022) 📄
- [3] D. A. Sasi Kiran\*, Kritika Anand\*, Chaitanya Kharyal\*, Gulshan Kumar, **Nandiraju Gireesh**, Snehasis Banerjee, Ruddra dev Roychoudhury, Mohan Sridharan, Brojeshwar Bhowmick, Madhava Krishna. *Spatial Relation Graph and Graph Convolutional Network for Object Goal Navigation*. In 18th IEEE International Conference on Automation Science and Engineering (**IEEE CASE** 2022) 📄
- [2] Mandan Naresh, **Nandiraju Gireesh**, Paresh Saxena, Manik Gupta. *SAC-ABR: Soft Actor-Critic based deep reinforcement learning for Adaptive BitRate streaming*. In 14th IEEE International Conference on COMMunication Systems & NETworkS (**IEEE COMSNETS** 2022) 🏆
- [1] Xingyi Yang, **Nandiraju Gireesh**, Eric Xing, Pengtao Xie. *XRayGAN: Consistency-preserving Generation of X-ray Images from Radiology Reports*. arXiv Pre-print 📄

## Awards

- 2024–Present Beijing Government Scholarship (BGS)
- 2018–2021 Prime Minister's Scholarship Scheme (PMSS)

## Research Experience

### Embodied Perception and InteraCtion (EPIC) Lab, Peking University

- Advisor Prof. He Wang
- Mar 23 – **Research Intern**
- Present ○ Introduced a fusion-driven, graspability-aware mobile manipulation method that ensures consistent temporal grasping pose observations. These observations can be encoded into a reward system, guiding the robot to emphasize detailed observations as it moves towards the best grasping positions. The approach's effectiveness was showcased through extensive real-world tests on a robot dog. [6]

## Robotics Research Center (RRC), IIIT Hyderabad

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Advisors Prof. Madhava Krishna, Prof. Mohan Sridharan, and Dr. Brojeshwar Bhowmick

May 21 – **Research Assistant**

- Mar 23
- Worked with researchers from TCS Research, Kolkata to improve and enhance the performance of embodied agents in object navigation, multi-object navigation and household tidying up tasks in both fundamentally novel and incremental performance driven ways.
  - Proposed Sequence Agnostic Multi-Object Navigation (SAM) task, wherein the agent is neither provided nor forced to compute a global order in which it locates instances of the target object classes. [5]
  - Proposed a modular RL-based method for the object-goal navigation task that addresses the problem of ‘where to go?’ using vision-based RL. [4]
  - Proposed a framework for the object-goal navigation task, that exploits a Spatial Relation Graph (SRG) which models the probability of proximity of objects and regions. [3]

## Data Science Lab, BITS Pilani–Hyderabad

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Advisor Prof. Paresh Saxena

Jan–May 2021 **Undergraduate Thesis Student**

- Developed a system for generating adaptive video bit rates (ABR) as well as network coding rates using reinforcement learning called SAC-ABR. [2]
- Our approach provides 27.42% higher average Quality of Experience (QoE) than state-of-the-art method Pensieve.

## AI-for-Healthcare Lab, UC San Diego

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Advisor Prof. Pengtao Xie

Mar–Aug 2020 **Research Intern**

- Proposed a framework to generate view-consistent, high-fidelity, and high-resolution X-ray images from Radiology reports to facilitate radiology training of medical students. [1]
- Our framework beats previous state-of-the-art methods by 17.7% and 15.8% on OpenI & MIMIC-CXR datasets on Visual Consistency measure respectively.

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## Talks & Presentations

- May 2024 *Audio-visual learning for Contact-rich Manipulation*, Galbot
- Mar 2024 *Impedance-control for Contact-rich Manipulation*, EPIC Lab - PKU
- Dec 2023 *Latest trends in Mobile Manipulation*, Galbot
- Apr 2023 *Embodied Mobile Manipulation*, EPIC Lab - PKU
- Jan 2023 *Sequence-Agnostic Multi-Object Navigation*, RnD Showcase - IIIT Hyd, 2023
- Jan 2022 *Object Goal Navigation using Data Regularized Q-Learning*, RnD Showcase - IIIT Hyd, 2022

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## Research Mentorship

Ayush Agrawal (RRC Intern, IIIT-H)

Ahana Dutta (B.Tech + MS at IIIT-H)