

Jahir Sadik Monon

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Research Interest

I work on embodied intelligence for assistive navigation for blind and low-vision travelers: reinforcement learning & vision-language-action policies that operate under partial observability and within the memory, latency, and power constraints of onboard compute. My earlier work was in decentralized multi-agent RL and representation learning.

Education

University of Massachusetts Amherst

Amherst, Massachusetts

MS/PhD in Computer Science

Sep 2025 - present

Group: DARoS lab | Advisor: [Dr. Donghyun Kim](#)

Research Focus: *RL/VLA-based control, Embodied navigation, Assistive robotics.*

University of Dhaka

Dhaka, Bangladesh

B.Sc. (Hons) in Computer Science and Engineering | [Coursework](#)

Jan 2019 - Dec 2023

CGPA: 3.93/4.00 | Class rank: 1/72

Thesis: *Multi-agent cooperation under sparse rewards via intrinsic rewards.*

Publications

[1] **GuideNav: User-Informed Development of a Vision-Only Robotic Navigation Assistant for Blind Travelers.** H. Hwang, S. Yang, [J.S. Monon](#), N.A. Giudice, S.I. Lee, J. Biswas, D. Kim. *ACM/IEEE Int. Conf. on Human-Robot Interaction (HRI)*, 2026. [**Honorable Mention, 3.6%**]

[2] **Learning Heterogeneous Agent Collaboration in Decentralized Multi-Agent Systems via Intrinsic Motivation.** [J.S. Monon](#), D.D. Barua, M.M. Khan. *Int. Conf. on Autonomous Agents and Multiagent Systems (AAMAS)*, 2025.

Preprints

[1] **NavAble: A Large-Scale Dataset and Synthetic Data Generation Pipeline for Blind Navigation.** H. Hwang*, [J.S. Monon](#)*, S. Yang*, S.U. Patel, A.N.H. Nguyen, K. Nguyen, K. Garg, D. Gage, D. Hordofaa, A. Anjna, E. Ohn-Bar, D. Kim. *NeurIPS Datasets and Benchmarks Track*, 2026. [**Under Review**] [[Dataset](#)] (*equal contribution)

[2] **BAPPA: Benchmarking Agents, Plans, and Pipelines for Automated Text-to-SQL Generation.** F. Ahmed, M.M. Ahasan, [J.S. Monon](#), M. Wahed, M.A. Amin, A.K.M.M. Rahman, A.A. Ali. *arXiv preprint*, 2025. [[arXiv](#)]

Open-source releases: NavAble dataset and generation pipeline ([HuggingFace](#)), GuideData interview and observation corpus ([Kaggle](#), CC0), CoHet implementation ([GitHub](#)), Walkability Dataset ([Kaggle](#)).

Research Experience

Dynamic and Autonomous Robotic Systems Lab | [DARoS Lab](#)

Sep 2025 - present

Graduate Research Assistant

Amherst, MA

- Designed assistive robotic guide dog navigation algorithms and datasets for blind and low-vision people: RL/VLA-based navigation and planning in quadruped robots for safe and efficient navigation.
- Researching the development of an RL-based human-following quadruped robot and VLA-based manipulation for the lab's custom-made 7-DoF Forte robotic arm.

- Researched VLM-based agent-controllable representations via multi-step inverse models for principled offline RL with rich exogenous information – advised by [Dr. Riashat Islam](#) from Microsoft Research.
- Studied multimodal reasoning and LLM-based multi-agent collaboration under supervision of [Dr. Amin Ahsan Ali](#), and [Dr. AKM Mahbubur Rahman](#) – in collaboration with [Muntasir Wahed](#).

- Investigated multi-agent RL policies in sparse reward environments with heterogeneous agents under the supervision of [Dr. Md Mosaddek Khan](#); organized seminars and workshops on RL, and LLMs.

Academic Experience

TEACHING

- Supported teaching of *Introduction to Robotics: Mechanics, Dynamics, and Control* through lectures, TA hours, and grading, and designed a Reusable Learning Object on coordinate frames and transformations to build students’ spatial visualization skills for robotic manipulation. | [RLO outcome](#).

- Lectured CIS-101 students on basic Python, application development, and introductory AI.

ADVISING

- Mentored UMass undergraduate [Keshav Garg](#) in curating an open-source dataset of accessibility-critical objects and in benchmarking SOTA segmentation model performance for assistive navigation.

Honors & Awards

Paul Utgoff Memorial Graduate Scholarship, CICS, UMass Amherst Article	2025
Honorable Mention (Systems Track), HRI Award Top 3.6% of accepted papers	2026
Dean’s Honor Award, University of Dhaka Article	2025
University of Dhaka Bachelor’s Merit Scholarship	2025
National Science and Technology Fellowship Bangladesh 11th out of 1,260 applicants	2025
Hult Prize Impact Summits Campus Champion & South Asia Regional Finalist	2021

Selected Projects

A Study on Dhaka City’s Walkability Research Project kaggle dataset	2022
Led a 70-person volunteer team to crowdsource a dataset capturing subjective walkability metrics across different suburbs of Dhaka city via Gaia GPS; performed data cleaning, visualization, and analysis on the data.	

Academic Service

Peer Review	AAMAS (Journal Track), ICIP, ICPR (2024)
Workshops	CSEDU, CCDS (2024)