

Jahir Sadik Monon

jahirsadik.github.io ◇ Google Scholar ◇ LinkedIn ◇ jmonon@umass.edu ◇ Amherst, Massachusetts

Research Interest

I study how embodied agents can make good decisions under limited onboard computation. My work spans VLA-based navigation for assistive robots and perception datasets with synthetic data pipelines for blind and low-vision travelers. I am now moving toward small VLA models and multi-agent collaboration among compact foundation models, building on my earlier work in decentralized multi-agent RL and representation learning.

Education

University of Massachusetts Amherst

Amherst, Massachusetts

MS/PhD in Computer Science

Sep 2025 - present (Expected: 05/30)

Advisor: [Dr. Shlomo Zilberstein](#) | Co-advisor: [Dr. Donghyun Kim](#)

Research Focus: *Resource-efficient embodied AI, Multi-agent collaboration, VLA and world models.*

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] **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. *Conf. on Neural Information Processing Systems (NeurIPS), Evaluations and Datasets Track*, 2026. (*equal contribution)

[2] **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%**]

[3] **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] **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 RL/VLA-based navigation for quadruped guide robots and a large-scale segmentation dataset with a synthetic data pipeline for blind and low-vision people, benchmarked on foundation models (e.g., SAM 3); worked on VLA-based manipulation for a custom 7-DoF arm.
- Built IsaacSim environments to evaluate VLA memory strategies for long-horizon navigation, in a joint project with the RBR Lab on resource-efficient communication among small VLAs.

- 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 CICS undergrad [Keshav Garg](#) on curating an open-source dataset of accessibility-critical objects and benchmarking segmentation models for assistive navigation (NeurIPS E&D 2026).

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	HRI (2027), AAMAS 2025 (Journal Track), ICIP, ICPR (2024)
Workshops	CSedu, CCDS (2024)