



Souradeep Mukhopadhyay

Roll No.: XXX

Ph.D in Computer Science

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GitHub Profile

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EDUCATION

•Arizona State University, Tempe, USA

2025-2030

Ph.D in Computer Science

CGPA: 4.17/4.00

•Indian Institute of Science, Bangalore, India

2022-2024

M.Tech in Artificial Intelligence

CGPA: 8/10

PROJECTS

•PHANTOM RECALL: When Familiar Puzzles Fool Smart Models

PhD

ASU

- PHANTOM RECALL introduces a benchmark of 25 classic logic puzzles plus 500 controlled perturbations to test whether LLMs truly re-reason or just reuse memorized templates. Across 11 leading LMs, it identifies a consistent failure mode—“phantom recall”—where models confidently output familiar-looking but now-wrong solutions when superficial details change. It is submitted in ACL 2026.

•Dynamic MultiAgent Framework for Toolcalling

PhD

ASU

- We propose a two-stage framework to reduce common multi-turn tool-agent failures (long-horizon reasoning, forgetting requests, policy violations, wrong tool use, and messy tool outputs) in τ^2 -bench, τ -bench, and ACEBench. First, we diagnose an agent’s most frequent trajectory errors; then a router selects specialized sub-agents (domain-constraint, dynamic memory, tool suggestion, tool-output reformulation, planner, decision verifier) to fix them. Across closed- and open-source backbones, this targeted agent curation consistently improves accuracy, reliability, and efficiency, even for small models. It is submitted in ACL 2026.

RESEARCH PUBLICATIONS

$\in \{J = \text{JOURNAL}, C = \text{CONFERENCE}, W = \text{WORKSHOP}, P = \text{PATENT}\}$

J1.“Towards Molecular Structure Discovery from Cryo-ET Density Volumes via Modelling Auxiliary Semantic Prototypes” was published in Briefings in Bioinformatics, Oxford University Press.

J2.“Meta-Learning to Teach Textual Prompts for Open Domain Generalization in Vision-Language Models” has been accepted to Transactions on Machine Learning Research (TMLR).

C1.“GraphVL: Graph-Enhanced Semantic Modeling via Vision-Language Models for Generalized Class Discovery” has been accepted in the Indian Conference on Computer Vision, Graphics and Image Processing, ACM.

C2.“TransE²UNet: Edge Guided TransEfficientUNET for Generalized Colon Polyp Segmentation from Endoscopy Images” has been accepted to the UK Conference on Medical Image Understanding and Analysis, Springer.

C3.“GAME: A Gated Multi-Expert DuckNet Approach for In-domain and Cross-domain Colon Polyp Segmentation” has been submitted to Australasian Joint Conference on Artificial Intelligence 2025 (**Australasian B**).

C4.“GOOSE-Net: Gompertz-augmented Overlapping Output-based Segmentation Enforcement for detecting colon polyp” has been accepted to 18th International Conference on Machine Vision (**Core C**).

C5.“Is Negative Correlation Learning a solution for cross-domain Colon Polyp Segmentation?” has been accepted to 18th International Conference on Machine Vision (**Core C**).

C6.“AURA-Net: Adaptive Uncertainty-weighted Ranking and Attention-driven Network for Generalized Colon Polyp Segmentation” has been accepted to The Pacific Rim International Conference on Artificial Intelligence (**Core B**).

P1.“AI AGENT AS A SERVICE (4AS)” has been filed for US Patent Application.

INDUSTRY EXPERIENCE

•Nokia

Aug, 2024-Aug, 2025

Research Specialist

Bangalore

- I conduct research primarily focused on telecommunications protocols, including 3GPP and ORAN, which play a crucial role in the development and advancement of 5G and 6G technologies. My work is closely aligned with the objectives of Nokia’s Networks & Solutions Development (NSD) team, where these protocols form the backbone of cutting-edge innovation in wireless communication. By studying and refining these protocols, I contribute to enhancing network performance, ensuring seamless connectivity, and driving the evolution of next-generation communication systems that will shape the future of global telecommunications.

TECHNICAL SKILLS AND INTERESTS

Languages: C, C++, Python, Matlab, Latex

Developer Tools: MeVisLab, VS code

Frameworks: Pytorch, Tensorflow