

# Sarvesh Gharat

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Seeking a Summer 2026 Research Internship in Reinforcement Learning, Agentic System, and LLM Reasoning

## EDUCATION

<b>IIT Bombay</b> <i>PhD in Artificial Intelligence and Data Science</i>	Mumbai, In <i>Jul. 2022 – May 2027</i>
<b>Vishwakarma Institute of Information Technology</b> <i>BTech in Electronics and Telecommunication</i>	Pune, In <i>Aug. 2018 – May 2022</i>

## RESEARCH INTERESTS

My research focuses on online learning, particularly multi-armed bandits and Markov decision processes (MDPs) for sequential decision-making. I'm also interested in multi-agent systems and currently work on inference-time algorithms along with the bandit theory.

## EXPERIENCE

<b>• Summer Research Intern</b> <i>Adobe Research</i>	May 2025 – July 2025 <i>Host: Soumyabrata Pal, Ramasuri Narayanan</i>
<ul style="list-style-type: none"><li>Improved LLM reasoning under fixed compute constraints by developing a novel method to inject auxiliary information during sequential test-time scaling.</li><li>Designed and implemented an efficient, on-the-fly example selection strategy using embedding similarity, leading to more relevant in-context examples during inference.</li><li>Focused on designing inference-time techniques that enhance model responses without changing any underlying parameters.</li></ul>	
<b>Patent Submitted(Approved by Adobe Review Committee)/ Paper in Progress:</b> Gharat, S., Pal, S., Narayanan. R., Guided Sequential Test Time Scaling using additional hints from exemplars	
<b>• Student Researcher</b> <i>Google DeepMind</i>	Oct 2024 – March 2025 <i>Host: Aparna Taneja, Milind Tambe</i>
<ul style="list-style-type: none"><li>Quantified the impact of AI-scheduled interventions on beneficiary engagement and health knowledge in a large-scale maternal health program, analyzing data from thousands of participants.</li><li>Demonstrated statistically significant improvements in selected maternal health knowledge and postnatal care behaviors via a rigorous comparative analysis of AI-targeted interventions versus matched control groups.</li><li>Improved reliability of survey-based insights by addressing noise and response variability, enabling statistically significant impact detection.</li></ul>	
<b>Paper Accepted:</b> Dasgupta, A.*, <b>Gharat, S.*</b> , Madhiwalla, N., Hegde, A., Tambe, M., Taneja, A. AI-Targeted Calls Drive Measurable Improvements in Maternal Health, PAIS ECAI 2025	
<b>• Research Assistant</b> <i>Tata Institute of Fundamental Research</i>	Aug 2021 – June 2022 <i>Host: Prof. Shri Ganesh Prabhu</i>
<ul style="list-style-type: none"><li>Designed optimization methods to estimate the refractive index of optically thin materials using Terahertz Time Domain Spectroscopy.</li><li>Implemented and benchmarked algorithms including Dual Annealing, SHGO, and Newton-Raphson to improve convergence stability.</li><li>Built a user-friendly Python library to support experimental analysis and make the refractive index estimation pipeline accessible for both researchers and educators.</li></ul>	

## SELECTED PUBLICATIONS

- Gharat, S.**, Karamchandani, N., Nair, J. Cost-Aware Best Arm Identification via Dueling Feedback with Applications to Large Language Models, (Full Paper to be Submitted, Extended Abstract accepted at AAMAS 2026)
- Gharat, S.**, Yadav, A., Karamchandani, N., Nair, J. Representative Arm Identification: A fixed confidence approach to identify cluster representatives, ICASSP 2025

- **Gharat, S.**, Borthakur, A., Bhatta, G. Estimation of redshift and associated uncertainty of Fermi/LAT extragalactic sources with Deep Learning, MNRAS 2024

Full publication list available at [scholar.google.com/sarveshgharat](https://scholar.google.com/sarveshgharat)

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## INVITED TALKS & PRESENTATIONS

- *Cost-Aware Best Arm Identification in Dueling Bandits* — Cohere for AI Research Connections (2025)
- *Representative arm identification: A fixed confidence approach to identify cluster representatives* — Cohere for AI Reinforcement Learning Group (2025)
- *Estimating Redshifts of AGNs using Neural Networks* — IAU-IAA Astroinformatics Seminar (2024)
- Posters: IndoML 2024, ACM PIC 2024, Google Research Week 2024, ACM ARCS 2026

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## ACADEMIC SERVICE & HIGHLIGHTS

- **Reviewer/PC:** IEEE Transactions on Information Theory, IJCAI AI for Social Good 2025, AAMAS 2025
- **Selected for:** ACM CODS-COMAD PhD Clinic, ACM PIC 2024, Google Research Week (2024, 2025), ACM India ARCS 2026
- **Kaggle:** Silver Medal – LLM Prompt Recovery Challenge (Ranked 79/2175)
- **Research Grants:** State Bank of India (SBI) sponsored grant (along with Prof. NK and Prof. JKN) on “Dynamic LLM Optimization and Fine-Tuning via Dueling Bandits”, 2025 - 2027
- **Collaborations:** VaTEST, LOFAR2.0 Ultra Deep Observations, AI4Astro, MAASI GDM

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## TECHNICAL SKILLS

- **Programming:** Python, LaTeX, Apps Script
- **Libraries:** PyTorch, TensorFlow, NumPy, pandas, vLLM, Transformers
- **Tools:** Jupyter Notebook, Git, Docker, Google Cloud Platform, VS Code