Ishika Agarwal

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Education

PhD, University of Illinois, Urbana-Champaign **Aug 2024 - May 2027 (expected)**
- Specialization: Data Efficient NLP
- Advisor: Dr. Dilek Hakkani-Tür

MS, University of Illinois, Urbana-Champaign **Aug 2022 - May 2024**
Major: Computer Science GPA: 3.88/4.00
- Relevant courses: Applied ML, Info Retrieval, Generative Models, Computer Vision, ML+Data Systems, Adv. NLP

BS, Purdue University **July 2019 - May 2022**
Major: Computer Science (concentration in ML) GPA: 3.88/4.00
- Relevant courses: Data Mining and ML (Python), Web Information Search and Management (Python)

Research Projects/Publications

1. [IP] **I. Agarwal**, D. Patil, N. Sadoughi, A. Vajpayee, Z. Liu: The Devil's in the Translation: a Data Efficient Approach to Improving Idiom Resolution
2. [IP] **I. Agarwal**, E. Norred, D. Hakkani-Tür: Active Multilingual Dense Video Captioning.
3. [Submitted to NeurIPS 2025] **I. Agarwal***, N. B. Bozdag*, D. Hakkani-Tür: Language Specific Knowledge: Do Models Know Better in X Than in English?
4. [Submitted to NeurIPS 2025] **I. Agarwal**, D. Hakkani-Tür: Data Valuation with Neural Network for Efficient Instruction Fine-Tuning
5. [ICLR 2025] **I. Agarwal**, K. Killamsetty, L. Popa, M. Danilevsky: DELIFT: Data Efficiency in Language model Fine-Tuning
6. [EMNLP 2024] P. Kargupta*, **I. Agarwal***, D. Hakkani-Tür, J. Han: Instruct, Not Assist: LLM-based Multi-Turn Planning and Hierarchical Questioning for Socratic Code Debugging
7. [Master's Thesis, 2024] **I. Agarwal**, H. Tong: Active Graph Anomaly Detection
8. [ICLR 2024] Y.Ban, **I. Agarwal**, Z.Wu, Y.Zhu, K.Weldemariam, H.Tong, J.He: Neural Active Learning Beyond Bandits
9. [SafeAI @ AAAI 2021] Z. Xiong, I. Agarwal, S. Jagannathan: HiSaRL: A Hierarchical Framework for Safe RL

Experience

Applied Science Intern - Amazon **May 2025 - Aug 2025**
Interned in the Content Localization team at Prime Video. Researching data-efficient, multilingual idiom resolution with continual learning.

Research Scientist Intern - IBM Research **May 2024 - Aug 2024**
Interned in the Conversational AI Model Development team. Developed new techniques to measure informativeness of data samples to efficiently fine-tune LLMs on instruction tuning data. Published DELIFT at ICLR 2024.

Research Assistant - UIUC **August 2022 - May 2024**
RA in Professor Hanghang Tong's IDEA Lab@UIUC. Working on three projects: (1) active graph anomaly detection (GAD), (2) efficient multi-armed bandits (MABs) for classification, and (3) an intersection between active GAD and efficient MABs.

ML Engineering Intern - Apple **May 2023 - Aug 2023**
Implemented a distributed training process for TensorFlow Ranker model used in the Apple Maps Search platform. Improved data generation and processing efficiency by 64%. Built feature engineering jobs in Spark.

Software Engineer - Cisco WebEx **Feb 2022 - Aug 2022**
Handled customer cases by debugging meeting issues and deploying fixes. Improved meeting features and mentored incoming summer interns. Trained coworkers in different teams on how to develop an internal debugging tool.

Research Assistant - Purdue University **May 2021 - Feb 2022**
RA in Professor Suresh Jagannathan's Lab. Worked on developing efficient and safe reinforcement learning algorithms for hierarchical agents. Submitted a workshop paper to SafeAI @ AAAI 2021.

Software Engineer Intern - Cisco WebEx **June 2021 - Aug 2021**
Improved the internal logging and debugging tool for WebEx meetings which displays meeting records. Implemented a filtering feature on top of existing code and revised flow design to improve memory bottlenecks for large meeting records.

Software Engineer, Summer Intern - Promega Corporation **June 2020 - Aug 2020**
Designed and developed a scheduling system for the COVID-19 testing machine. Built a generic scheduling library for cloud backend or embedded systems. Wrote libraries in C# .NET, with 100% unit-test coverage, and integrated it in the UI.