

Archiki PRASAD

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RESEARCH INTERESTS

My research goal is to build natural language processing systems that can reason in an efficient, robust, and interpretable manner.

Major Interests: Reasoning and Decision-making, Robustness, Self-Supervised Learning.

Other Interests: Compositional Learning, Explainability, Robustness.

EDUCATION

Present Aug 2021	The University of North Carolina, CHAPEL HILL, USA Ph.D. in Computer Science Advisor: Mohit Bansal Concentration: Natural Language Processing
May 2021 August 2016	Indian Institute of Technology Bombay, MAHARASHTRA, India Bachelor + Master of Technology, Major: Electrical Engineering GPA: 9.66/10 Minor: Computer Science and Engineering

EXPERIENCE

Present Aug 2021	UNC-NLP Research Group, UNC CHAPEL HILL, US Research Assistant Advisor: Mohit Bansal <ul style="list-style-type: none">Improving reasoning, planning, and coding abilities of large language and multimodal models
Aug 2024 May 2024	Fundamental AI Research Labs, Meta, NEW YORK CITY, US Research Scientist Intern Advisors: Jason Weston , Maryam Fazel-Zarandi <ul style="list-style-type: none">Enabling LLMs to learn to reason in an iterative and unsupervised manner
Aug 2023 May 2023	Allen Institute of Artificial Intelligence (AI2), SEATTLE, US Research Intern (Aristo) Advisors: Tushar Khot , Ashish Sabharwal , Peter Clark <ul style="list-style-type: none">Designed an adaptive task decomposition framework for LLM agents on interactive tasks
Aug 2022 May 2022	Adobe Research, SAN JOSE (REMOTE), US Research Scientist Intern (NLP) Advisors: Trung Bui , David Yoon , Franck Dernoncourt <ul style="list-style-type: none">Developed a challenging benchmark on extracting question-answer pairs from meeting transcripts
May 2021 Aug 2019	Computational Speech And Language Technologies (CSALT) Lab, IIT BOMBAY, India Research Assistant Advisor: Preethi Jyothi <ul style="list-style-type: none">Modeling accents and noise robustness for automatic speech recognition systemsImproving language modeling and understanding for code-switched languages
Jul 2019 May 2019	Adobe Research, BANGALORE, India Research Intern Advisor: Shiv Kumar Saini <ul style="list-style-type: none">Worked on time-series forecasting in low/zero-data settings using memory-augmented networks

PUBLICATIONS

2024 Swarnadeep Saha, **Archiki Prasad**, Justin Chih-Yao Chen, Peter Hase, Elias Stengel-Eskin, Mohit Bansal “System-1.x: Learning to Balance Fast and Slow Planning with Language Models” Arxiv Preprint 2024

2024 Han Wang*, **Archiki Prasad***, Elias Stengel-Eskin*, Mohit Bansal “Soft Self-Consistency Improves Language Model Agents” In Proceedings of the Annual Conference of the Association for Computational Linguistics (**ACL 2024**) [PDF]

2024 Elias Stengel-Eskin*, **Archiki Prasad***, Mohit Bansal “ReGAL: Refactoring Programs to Discover Generalizable Abstractions” In Proceedings of the forty-first International Conference on Machine Learning (**ICML 2024**) [PDF]

2024 **Archiki Prasad**, Elias Stengel-Eskin, Mohit Bansal “Rephrase, Augment, Reason: Visual Grounding of Questions for Vision-Language Models” In Proceedings of the twelfth International Conference on Learning Representations (**ICLR 2024**) [PDF]

2024 **Archiki Prasad**, Alexander Koller, Mareike Hartmann, Peter Clark, Ashish Sabharwal, Mohit Bansal, Tushar Khot “ADAPT: As-Needed Decomposition and Planning with Language Models” In Findings of Conference of the North American Chapter of the Association for Computational Linguistics (**Findings of NAACL 2024**) [PDF]

2023 Archiki Prasad, Swarnadeep Saha, Xiang Zhou, Mohit Bansal “RECEVAL: Evaluating Reasoning Chains via Correctness and Informativeness” In Proceedings of Conference on Empirical Methods in Natural Language Processing (EMNLP 2023) [PDF]

2023 Archiki Prasad, Trung Bui, Seunghyun Yoon, Hanieh Deilamsalehy, Franck Dernoncourt, Mohit Bansal “MEETINGQA: Extractive Question-Answering on Meeting Transcripts” In Proceedings of the Annual Conference of the Association for Computational Linguistics (ACL 2023) [PDF]

2023 Archiki Prasad, Peter Hase, Xiang Zhou, Mohit Bansal “GRIPS: Gradient-free, Edit-based Instruction Search for Prompting Large Language Models” In Proceedings of the Conference of the European Chapter of the Association for Computational Linguistics (EACL 2023) [PDF]

2021 Archiki Prasad*, Mohammad Ali Rehan*, Shreya Pathak*, Preethi Jyothi “The Effectiveness of Intermediate-Task Training for Code-Switched Natural Language Understanding” In Proceedings of the Workshop on Multilingual Representation Learning (MRL 2021) at EMNLP 2021 [PDF] (Best Paper Honorable Mention)

2021 Archiki Prasad, Preethi Jyothi, Rajbabu Velmurugan “An Investigation of End-to-End Models for Robust Speech Recognition” In Proceedings of IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2021) [PDF]

2021 Archiki Prasad, Vishal Jain, Sharayu Moharir “Decentralized Age-of-Information Bandits” In Proceedings of the IEEE Wireless Communications and Networking Conference (WCNC 2021) [PDF]

2020 Archiki Prasad, Preethi Jyothi “How Accents Confound: Probing for Accent Information in End-to-End Speech Recognition Systems” In Proceedings of the 2020 Annual Conference of the Association for Computational Linguistics (ACL 2020) [PDF]

2020 Ayush Chauhan, Archiki Prasad, Parth Gupta, Amiredddy Prashanth Reddy, Shiv Kumar Saini “Time Series Forecasting for Cold-Start Items by Learning from Related Items using Memory Networks” In Companion Proceedings of the Web Conference 2020 (WWW 2020) [PDF]

PATENTS

2022 Ayush Chauhan, Shiv Kumar Saini, Parth Gupta, Archiki Prasad, Amiredddy Prashanth Reddy, and Ritwick Chaudhry “Key-value memory network for predicting time-series metrics of target entities” US Patent and Trademarks Office 2022 | Adobe Inc. [US11501107]

INVITED TALKS

Microsoft Turing Speaker Series

SPRING 2024

“As-Needed Decomposition and Planning with Language Models” [slides]

HONORS AND AWARDS

- › IIT Bombay Institute Academic Prize for outstanding performance in the academic year 2019-20
- › Secured an all India rank of 144 in JEE-Main 2016 out of roughly 10 million applicants.
- › Amongst top 1.2% of all selected candidates (200,000) JEE-Advance 2016.
- › Google participation award for Multilingual Representation Learning 2021.
- › Advanced Performer’s grade (about top 1% of class) in Linear Algebra and Economics

PROFESSIONAL SERVICES

Conference Reviewer

- › EMNLP 2021-2024
- › ACL 2022-2024 (ACL Rolling Review)
- › NAACL 2022-2024 (ACL Rolling Review)

REFERENCES

- › Mohit Bansal, John R. Louise S. Parker Professor of CS, UNC Chapel Hill.
- › Jason Weston, Senior Director Research Scientist, FAIR Labs, Meta, NYC.
- › Tushar Khot, Lead Research Scientist, Allen Institute of Artificial Intelligence, Seattle.
- › Ashish Sabharwal, Principal Research Scientist, Allen Institute of Artificial Intelligence, Seattle.