

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, Reward Modeling, Self-Supervised Learning.

Other Interests: Compositional Learning, Explainability, Robustness.

EDUCATION

Present Aug 2021	The University of North Carolina, CHAPEL HILL, USA <i>Ph.D. in Computer Science</i> 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 <i>Research Assistant</i> Advisor: Mohit Bansal ➤ 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 <i>Research Scientist Intern</i> Advisors: Jason Weston , Maryam Fazel-Zarandi ➤ Enabling LLMs to learn to reason in an iterative and unsupervised manner
Aug 2023 May 2023	Allen Institute of Artificial Intelligence (AI2), SEATTLE, US <i>Research Intern (Aristo)</i> Advisors: Tushar Khot , Ashish Sabharwal , Peter Clark ➤ Designed an adaptive task decomposition framework for LLM agents on interactive tasks
Aug 2022 May 2022	Adobe Research, SAN JOSE (REMOTE), US <i>Research Scientist Intern (NLP)</i> Advisors: Trung Bui , David Yoon , Franck Dernoncourt ➤ 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 <i>Research Assistant</i> Advisor: Preethi Jyothi ➤ Modeling accents and noise robustness for automatic speech recognition systems ➤ Improving language modeling and understanding for code-switched languages
Jul 2019 May 2019	Adobe Research, BANGALORE, India <i>Research Intern</i> Advisor: Shiv Kumar Saini ➤ Worked on time-series forecasting in low/zero-data settings using memory-augmented networks

PUBLICATIONS

2024 Archiki Prasad, Weizhe Yuan, Richard Yuanzhe Pang, Jing Xu, Maryam Fazel-Zarandi, Mohit Bansal, Sainbayar Sukhbaatar, Jason Weston, Jane Yu “Self-Consistency Preference Optimization” Arxiv Preprint 2024 [PDF]

2024 Duy Nguyen*, Archiki Prasad*, Elias Stengel-Eskin, Mohit Bansal “LASER: Learning to Adaptively Select Reward Models with Multi-Armed Bandits” Arxiv Preprint 2024 [PDF]

2024 Justin Chih-Yao Chen, Archiki Prasad, Swarnadeep Saha, Elias Stengel-Eskin, Mohit Bansal “MAGICoRE: Multi-Agent, Iterative, Coarse-to-Fine Refinement for Reasoning” Arxiv Preprint 2024 [PDF]

2024 Han Wang, Archiki Prasad, Elias Stengel-Eskin, Mohit Bansal “ADACAD: Adaptively Decoding to Balance Conflicts between Contextual and Parametric Knowledge” Arxiv Preprint 2024 [PDF]

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 [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](#)]

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](#)]

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, Amireddy 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**, Amireddy 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.