

# 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, Compositional Learning, Prompt-based Learning.

**Other Interests:** Self-Supervised Learning, Explainability, Robustness.

## EDUCATION

Present Aug 2021	The University of North Carolina, CHAPEL HILL, USA Ph.D. in Computer Science   Advisor: <a href="#">Mohit Bansal</a> 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: <a href="#">Mohit Bansal</a> <ul style="list-style-type: none"><li>Improving reasoning, planning, and coding abilities of large language and multimodal models</li></ul>
Aug 2023 May 2023	Allen Institute of Artificial Intelligence (AI2), SEATTLE, US Research Intern (Aristo)   Advisors: <a href="#">Tushar Khot</a> , <a href="#">Ashish Sabharwal</a> , <a href="#">Peter Clark</a> <ul style="list-style-type: none"><li>Designed an adaptive task decomposition framework for LLM agents on interactive tasks</li></ul>
Aug 2022 May 2022	Adobe Research, SAN JOSE (REMOTE), US Research Scientist Intern (NLP)   Advisors: <a href="#">Trung Bui</a> , <a href="#">David Yoon</a> , <a href="#">Franck Dernoncourt</a> <ul style="list-style-type: none"><li>Developed a challenging benchmark on extracting question-answer pairs from meeting transcripts</li></ul>
May 2021 Aug 2019	Computational Speech And Language Technologies (CSALT) Lab, IIT BOMBAY, India Research Assistant   Advisor: <a href="#">Preethi Jyothi</a> <ul style="list-style-type: none"><li>Modeling accents and noise robustness for automatic speech recognition systems</li><li>Improving language modeling and understanding for code-switched languages</li></ul>
Jan 2021 Jan 2020	Indian Institute of Technology Bombay, MAHARASHTRA, India Research Assistant   Advisor: <a href="#">Sharayu Moharir</a> <ul style="list-style-type: none"><li>Worked on designing scheduling policies using multi-armed bandits</li></ul>
Jul 2019 May 2019	Adobe Research, BANGALORE, India Research Intern   Advisor: <a href="#">Shiv Kumar Saini</a> <ul style="list-style-type: none"><li>Worked on time-series forecasting in low/zero-data settings using memory-augmented networks</li></ul>

## PUBLICATIONS

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 the 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

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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

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### Microsoft Turing Speaker Series

SPRING 2024

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

## HONORS AND AWARDS

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- 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

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### Conference Reviewer

- EMNLP 2021-2023
- ACL 2022-2024 (ACL Rolling Review)
- NAACL 2022-2024 (ACL Rolling Review)

## REFERENCES

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- Mohit Bansal, John R. Louise S. Parker Professor of CS, UNC Chapel Hill.
- Tushar Khot, Lead Research Scientist, Allen Institute of Artificial Intelligence, Seattle.
- Ashish Sabharwal, Principal Research Scientist, Allen Institute of Artificial Intelligence, Seattle.
- Trung Bui, Senior Research Scientist and Research Manager, Adobe Research, San Jose.
- Franck Dernoncourt, Senior Research Scientist, Adobe Research, Seattle.