Archiki PRASAD

🌐 archiki.github.io   @ archiki@cs.unc.edu   ⭘ github.com/archiki
in linkedin.com/in/archiki-prasad   🎓 Google Scholar

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: 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* › Working on prompt-based learning methods with large language and multimodal models › Working on consistency and reasoning with language models
Aug 2023 **May 2023**	Allen Institute of Artificial Intelligence (AI2), SEATTLE, US *Research Intern, Aristo	Advisors: Tushar Khot, Ashish Sabharwal* › Working on a flexible, hierarchical, and dynamic decomposition framework for reasoning with LLMs
Aug 2022 **May 2022**	Adobe Research, SAN JOSE (REMOTE), US *Research Scientist Intern (NLP)	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 *Research Assistant	Advisor: Preethi Jyothi* › Intermediate-task training for natural language understanding tasks in code-switched languages › Probing accent information in black-box end-to-end automatic speech recognition systems › Joint noise and accent robustness in automatic speech recognition systems
Jan 2021 **Jan 2020**	Indian Institute of Technology Bombay, MAHARASHTRA, India *Research Assistant	Advisor: Sharayu Moharir* › Worked on designing scheduling policies using multi-armed bandits
Jul 2019 **May 2019**	Adobe Research, BANGALORE, India *Research Intern	Advisor: Shiv Kumar Saini* › Worked on time-series forecasting in low/zero-data settings using memory-augmented networks

PUBLICATIONS

2024 Han Wang*, **Archiki Prasad***, Elias Stengel-Eskin*, Mohit Bansal *"Soft Self-Consistency Improves Language Model Agents"* Arxiv Preprint [PDF]

2024 Elias Stengel-Eskin*, **Archiki Prasad***, Mohit Bansal *"REGAL: Refactoring Programs to Discover Generalizable Abstractions"* Arxiv Preprint [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]

2023 **Archiki Prasad**, Alexander Koller, Mareike Hartmann, Peter Clark, Ashish Sabharwal, Mohit Bansal, Tushar Khot *"ADAPT: As-Needed Decomposition and Planning with Language Models"* Arxiv Preprint [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 *"MᴇᴇᴛɪɴɢQA: Extractive Question-Answering on Meeting Transcripts"* In Proceedings of the 2023 Annual Conference of the Association for Computational Linguistics (**ACL 2023**) [PDF]

2023 Archiki Prasad, Peter Hase, Xiang Zhou, Mohit Bansal *"GʀɪPS: Gradient-free, Edit-based Instruction Search for Prompting Large Language Models"* In Proceedings of the 17th 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 2021 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 2021 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 2021 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]

Pᴀᴛᴇɴᴛꜱ

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]

Hᴏɴᴏʀꜱ ᴀɴᴅ Aᴡᴀʀᴅꜱ

> IIT Bombay Institute Academic Prize for outstanding performance in the academic year 2019-20
> Amongst top 1.2% of all selected candidates (200,000) JEE-Advance 2016 and amongst top 0.1% of all candidates in JEE-Mains 2016.
> Google participation award for MRL 2021.
> Advanced Performer's grade (about top 1% of class) in Linear Algebra and Economics

Pʀᴏꜰᴇꜱꜱɪᴏɴᴀʟ Sᴇʀᴠɪᴄᴇꜱ

Conference Reviewer

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

Rᴇʟᴇᴠᴀɴᴛ Cᴏᴜʀꜱᴇᴡᴏʀᴋ

* = Graduate Level Courses

Mathematics: Linear Algebra*, Real Analysis, Complex Analysis, Multivariate Calculus, Differential Equations

Computer Science: Computer Programming, Data Structures and Algorithms, Operating Systems, Computer Organization, Digital Logic

Machine Learning: Machine Learning*, Structured Prediction*, Language & Learning*, Large Language Models*, Connecting Language to Vision & Robotics*, Information Theory & Coding*, Automatic Speech Recognition*, Natural Language Processing, Digital Image Processing

Probability and Statistics: Probability and Random Processes, Data Analysis and Interpretation, Concentration Inequalities*

Sᴋɪʟʟꜱ

Programming Languages:	C/C++, Python, R, bash
SW/ Tools:	MATLAB, Scilab, Git, Docker, LᴬTEX, Arduino, Quartus
ML Libraries:	TensorFlow, PyTorch, Keras, NumPy, OpenCV, Pandas, Scikit Learn

Rᴇꜰᴇʀᴇɴᴄᴇꜱ

> Mohit Bansal, John R. Louise S. Parker Professor of CS, UNC Chapel Hill.
> Tushar Khot, Research Scientist, Allen Institute of Artificial Intelligence, Seattle.
> Ashish Sabharwal, Senior Research Scientist, Allen Institute of Artificial Intelligence, Seattle.
> Trung Bui, Senior Research Scientist, Adobe Research, San Jose
> Franck Dernoncourt, NLP Researcher, Adobe Research, Seattle
> Preethi Jyothi, Associate Professor of CS, Indian Institute of Technology Bombay