Archiki Prasad

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Research Interests

My research goal is to make natural language processing systems more scalable, robust, and interpretable.

Major Interests: Robustness, Interpretability, Explainability, Prompt-based Learning
Other Interests: Fairness, Self-Supervised Learning, Commonsense Reasoning, Multilinguality.

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 | Supervisor: Prof. Mohit Bansal
- Working on prompt-based learning methods

May 2021 – Aug 2019 | **Computational Speech And Language Technologies (CSALT) Lab, IIT Bombay, India**
Research Assistant | Advisor: Prof. 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: Prof. Sharayu Moharir
- Worked on designing scheduling policies using multi-armed bandits

Jul 2019 – May 2019 | **Adobe Research, Bangalore, India**
Research Intern | Advisor: Dr. Shiv Kumar Saini
- Worked on time-series forecasting in low/zero-data settings using memory-augmented networks

Publications

2022 **Archiki Prasad**, Peter Hase, Xiang Zhou, Mohit Bansal *"GrIPS: Gradient-free, Edit-based Instruction Search for Prompting Large Language Models"* Arxiv Preprint 2022 [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, and 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, and Sharayu Moharir *"Decentralized Age-of-Information Bandits"* In Proceedings of the 2021 IEEE Wireless Communications and Networking Conference **(WCNC 2021)** [PDF]

2020 **Archiki Prasad**, and 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, and 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

2020 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 2020 | Adobe Inc. [Application No. US16/868942]

Professional Services

Conference Reviewer

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

Scholastic Achievements and Awards

- 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.
- Amongst top 0.1% of all candidates in JEE-Mains 2016.
- Google participation award for MRL 2021.
- Selected to attend the Natural Language Understanding track of the Google AI summer school conducted by Google Research India
- Advanced Performer's grade (about top 1% of class) in Linear Algebra and Economics

Relevant Coursework

* = 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 and Learning*, Information Theory and Coding*, Automatic Speech Recognition*, Natural Language Processing (online), Digital Image Processing

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

Skills

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