

# Deeksha Varshney

ASSISTANT PROFESSOR

Room no. 304-C, Instrumental Building, IIT Jodhpur

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## Education

### Assistant Professor SAIDE, IIT Jodhpur

NATURAL LANGUAGE PROCESSING, DIALOGUE SYSTEMS, REASONING AND INTERPRETABILITY IN LLMs, SLMS, NLP FOR HEALTHCARE AND CLIMATE, MULTILINGUAL LLMs

Rajasthan, India

July, 2025 - Present

### Research Fellow (Prof. Gianmarco Mengaldo, National University of Singapore)

CLIMATE AI AND SUSTAINABLE FINANCE

Singapore

February, 2024 - June, 2025

### Research Fellow (Prof. Yang You, National University of Singapore)

UNCERTAINTY IN LLMs

Singapore

August, 2023 - February, 2024

### Research Scholar (Indian Institute of Technology, Patna)

PHD IN COMPUTER SCIENCE AND ENGINEERING

- CGPA: 8.78/10
- Thesis Title: Enhancing Dialogue Generation Models Via Multi-Source Heterogeneous Information
- Defence Date: 4-Dec-2023 (Graduated)

Bihar, India

July, 2018 - December, 2023

### Banaras Hindu University, Varanasi

M.Sc. IN COMPUTER SCIENCE

- CGPA: 8.08/10

Uttar Pradesh, India

July, 2016 - June 2018

B.Sc. IN COMPUTER SCIENCE

- CGPA: 8.82/10

July, 2013 - June 2016

### St. Johns School, DLW, Varanasi

INTERMEDIATE

- Percentage: 86%

Uttar Pradesh, India

July, 2011 - June 2013

HIGH SCHOOL

- Percentage: 85.1%

July, 2010 - June 2011

## Teaching

INSTRUCTOR

July 2025

- CSL7610 – Artificial Intelligence** (Ph.D. & M.Tech Programmes, July 2025 – December 2025), IIT Jodhpur, India
- AIL7390 – Deep Learning for Natural Language Processing** (Ph.D., M.Tech & B.Tech Programmes), IIT Jodhpur, India
- AIL7260 – Foundations of Vision and Language** (M.Tech, Ph.D. & B.Tech Programmes), IIT Jodhpur, India
- Machine Learning-1** (B.S./B.Sc. in Applied AI and Data Science – Online Programmes), IIT Jodhpur, India

No. of PhD Students: 1

No. of PostDoctoral Students: 0

## Skills

**Programming** Python, PyTorch, Keras, C/C++, JAVA, LaTeX

**Web** CSS, PHP, HTML5, Javascript, Flask

**Database** SQL, MySQL, Apache, MongoDB

**Machine Learning** Scikit-learn, Pytorch, Matplotlib, Hugging Face, Gensim

**Languages** English, Hindi, Japanese

**Research & Academic Skills** Scientific Writing, Paper Submission, Peer Review, Grant Writing, Mentorship of PhD/Postgrad Students

## Referees

## Extra curricular & Volunteer Work

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2021	<b>Session Chair</b> , PACLIC35 2021	
2022, 2024	<b>Tutorials</b> , GIAN Workshop on Conversational AI, Knowledge-enhanced Response Generation in Dialogue Systems: Current Advancements and Emerging Horizons	IIT Patna, LREC-COLING
2019	<b>Volunteer</b> , GIAN Workshop on Introduction to Unsupervised Data Mining: From Batch to Stream Mining Algorithms,	IIT Patna
2018-21	<b>Reviewer</b> , ACL, ACL-SRW, Expert System and Application, TALLIP, ICON, ICONIP, TCBB, PLOS One, Neural Networks (Elsevier)	IIT Patna
2021, 2023, 2023	<b>Attendee</b> , Google Research Week, Amazon Research Week, ACM India Grad Cohort	Bangalore
2022-2023	<b>DAPC Student Representative</b> , Department of Computer Science and Engineering	IIT Patna
2022	<b>Google Student Travel Grant</b> , Received travel grant for attending NAACL (Seattle, USA) (\$3000) and EMNLP (AbuDhabi, UAE) (\$1500) conference	IIT Patna
2022	<b>Program Committee</b> , ICONIP (International Conference on Neural Information Processing), IJCNLP-AAACL Demos 2023, ICON 2023	IIT Patna
2022	<b>A position paper titled “Spoken Dialogue Systems”</b> , accepted in the YRRSDS 2022 Workshop ( <a href="https://sites.google.com/view/yrrsds2022/proceedings">https://sites.google.com/view/yrrsds2022/proceedings</a> )	IIT Patna

## Publications

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### JOURNALS

- Priyanshu Priya, Armita Mani Tripathi, **Deeksha Varshney**, Mauajama Firdaus, and Asif Ekbal. EMPOWER-KARE: Deep Prompt Learning for Knowledge-aware Response Generation in Clinical Counseling and Legal Support Conversations. **IEEE Transactions on Artificial Intelligence (Impact Factor: 5.94)**
- **Deeksha Varshney**, Niranshu Behera, Prajeet Katari and Asif Ekbal. MedProm: Bridging Dialogue Gaps in Healthcare with Knowledge-Enhanced Generative Models. **ACM Transactions on Computing for Healthcare (Impact Factor: 3.26)**
- **Deeksha Varshney**, Asif Ekbal, and Erik Cambria. “Emotion-and-knowledge grounded response generation in an open-domain dialogue setting.” **Knowledge-Based Systems. (h5-index: 151)(Impact Factor: 8.8)**
- **Deeksha Varshney** and Asif Ekbal. “Yes, I am afraid of the sharks and also wild lions!: A multitask framework for enhancing dialogue generation via knowledge and emotion grounding” **Computer Speech & Language (Impact Factor: 3.1)**
- **Deeksha Varshney**, Anushkha Singh, Asif Ekbal “Aspect-level Sentiment- Controlled Knowledge Grounded Multimodal Dialog Generation using Generative Models for Reviews.” **Multimedia Tools and Applications, Springer. (h5-index: 96)(Impact Factor: 3.6)**
- **Deeksha Varshney**, Aizan Zafar, Niranshu Behera, Asif Ekbal. “Knowledge Graph Assisted End-to-End Medical Dialogue Generation” **Journal of Artificial Intelligence in Medicine. (h5 index: 93), (Impact Factor: 7.011)**
- **Deeksha Varshney**, Aizan Zafar, Niranshu Kumar Behera, Asif Ekbal. “Knowledge grounded medical dialogue generation using augmented graphs.” **Scientific Reports** Volume 13, 3310 (2023). **(h5 index: 206), (Impact Factor: 4.996)**
- **Deeksha Varshney**, Asif Ekbal, Mrigank Tiwari, and Ganesh Prasad Nagaraja. “EmoKbGAN: Emotion controlled response generation using Generative Adversarial Network for knowledge grounded conversation.” **PloS one** 18, no. 2 (2023): e0280458. **(h5 index: 186), (Impact Factor: 3.752)**
- Aizan Zafar **Deeksha Varshney**, Sovan Kumar Sahoo, Asif Ekbal, Amitava Das “Are my Answers Medically Accurate? Exploiting Medical Knowledge Graphs for Medical Question Answering” **Applied Intelligence (Impact Factor: 5.3)**
- Aizan Zafar, Sovan Kumar Sahoo, **Deeksha Varshney**, Asif Ekbal, Amitava Das “KIMedQA: Towards building Knowledge-enhanced Medical QA models” **Journal of Intelligent Information Systems (Impact Factor: 3.4)**

### CONFERENCES

- Keane Ong, Rui Mao, **Deeksha Varshney**, Paul Pu Liang, Erik Cambria, and Gianmarco Mengaldo. "Deriving Strategic Market Insights with Large Language Models: A Benchmark for Forward Counterfactual Generation." In **Proceedings of the 2025 Conference on Empirical Methods in Natural Language Processing**, 2025. **(h5-index: 218), (Core ranking: A\*)**
- Keane Ong, Rui Mao, **Deeksha Varshney**, Erik Cambria, and Gianmarco Mengaldo. 2025. Towards Robust ESG Analysis Against Greenwashing Risks: Aspect-Action Analysis with Cross-Category Generalization. In **Proceedings of the 63rd Annual Meeting of the Association for Computational Linguistics** (Volume 1: Long Papers), pages 14854–14879, Vienna, Austria. Association for Computational Linguistics. **(h5-index: 236), (Core ranking: A\*)**
- **Deeksha Varshney**, Aizan Zafar, Niranshu Behera, and Asif Ekbal. 2022. "CDialog: A Multi-turn Covid-19 Conversation Dataset for Entity-Aware Dialog Generation." In **Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing**, pages 11373–11385, Abu Dhabi, United Arab Emirates. Association for Computational Linguistics. **(h5-index: 218), (Core ranking: A\*)**
- **Deeksha Varshney**, Akshara Prabhakar, and Asif Ekbal. 2022. "Commonsense and Named Entity Aware Knowledge Grounded Dialogue Generation." In **Proceedings of the 2022 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies**, pages 1322–1335, Seattle, United States. Association for Computational Linguistics. **(h5-index: 126), (Core ranking: A)**
- **Deeksha Varshney**, Asif Ekbal, and Pushpak Bhattacharyya. "Modelling context emotions using multi-task learning for emotion controlled dialog generation." **Proceedings of the 16th Conference of the European Chapter of the Association for Computational Linguistics: Main Volume**. 2021. **(h5-index; 77), (Core ranking: A)**
- **Deeksha Varshney**, Anushkha Singh and Asif Ekbal. "Knowledge Grounded Multimodal Dialog Generation in Task-oriented Settings." In **Proceedings of the 35th Pacific Asia Conference on Language, Information and Computation**, pp. 425-435. 2021.
- **Deeksha Varshney**, Asif Ekbal, Ganesh Prasad Nagaraja, Mrigank Tiwari, Abhijith Athreya Mysore Gopinath, and Pushpak Bhattacharyya. "Natural language generation using transformer network in an open-domain setting." In *International Conference on Applications of Natural Language to Information Systems*, pp. 82-93. Cham: Springer International Publishing, 2020. "Natural language generation using transformer network in an open-domain setting." In *Natural Language Processing and Information Systems: 25th International Conference on Applications of Natural Language to Information Systems, NLDB 2020, Saarbrücken, Germany, June 24–26, 2020, Proceedings 25* (pp. 82-93). Springer International Publishing.
- Ghosh, Soumitra, **Deeksha Varshney**, Asif Ekbal, and Pushpak Bhattacharyya. "Context and knowledge enriched transformer framework for emotion recognition in conversations." In *2021 International joint conference on neural networks (IJCNN)*, pp. 1-8. IEEE, 2021.
- Ahmad, Zishan, **Deeksha Varshney**, Asif Ekbal, and Pushpak Bhattacharyya. "Multi-linguality helps: Event-Argument Extraction for Disaster Domain in Cross-lingual and Multi-lingual setting." In *Proceedings of the 16th International Conference on Natural Language Processing*, pp. 135-142. 2019.
- Ahmad, Zishan, **Deeksha Varshney**, Asif Ekbal, and Pushpak Bhattacharyya. "Multi-lingual event identification in disaster domain." In *Computational Linguistics and Intelligent Text Processing: 20th International Conference, CICLing 2019, La Rochelle, France, April 7–13, 2019, Revised Selected Papers, Part I*, pp. 129-142. Cham: Springer Nature Switzerland, 2023.