Deeksha **Varshney**

RESEARCH SCHOLAR (FOURTH YEAR) · COMPUTER SCIENCE & ENGINEERING

A001, Girls Hostel, ITT Patna, Bihta, Bihar, 801103, India

☐ +91-8604544582 | ✉ deeksha.varshney2695@gmail.com | ⚫ deekshaVarshney | ⬛ deeksha-varshney-5922b57b

Education

Research Scholar (Indian Institute of Technology, Patna)   *Bihar, India*
PHD IN COMPUTER SCIENCE AND ENGINEERING   *July. 2018 - PRESENT*
- CGPA: 8.74/10

Banaras Hindu University, Varanasi   *Uttar Pradesh, India*
M.SC. IN COMPUTER SCIENCE   *July. 2016 - June 2018*
- CGPA: 8.08/10

B.SC. IN COMPUTER SCIENCE   *July. 2013 - June 2016*
- CGPA: 8.82/10

St. Johns School, DLW, Varanasi   *Uttar Pradesh, India*
INTERMEDIATE   *July. 2011 - June 2013*
- Percentage: 85.3%

HIGH SCHOOL   *July. 2010 - June 2011*
- Percentage: 86%

Skills

Programming	Python, PyTorch, keras, C/C++, JAVA, LaTeX
Web	CSS, PHP, HTML5, javascript
Database	SQL, MySQL, Apache, MongoDb
Languages	English, Hindi, Japanese

Research Experience

Indian Institute of Technology, Patna (Advisor: Dr. Asif Ekbal)   *Bihar, India*
KNOWLEDGE GROUNDED DIALOGUE GENERATION WITH TOPIC-SPECIFIC AND COMMONSENSE KNOWLEDGE   *(Jan, 2021 – present)*
- Developing a novel open-domain conversation generation model which effectively utilizes the large-scale commonsense knowledge in addition to the unstructured topic-specific knowledge associated with each utterance.

KNOWLEDGE GRAPH ASSISTED DIALOGUE GENERATION IN MEDICAL DOMAIN   *(Feburary, 2021 – present)*
- Developing a novel medical dialogue system in which we combine various pre-trained language models with a medical knowledge base (UMLS) to generate clinically correct and human-like medical conversations using the recently released MedDialog (EN) dataset.

MODELLING CONTEXT EMOTIONS FOR EMOTION CONTROLLED DIALOG GENERATION   *(June, 2020 – Jan 2021)*
- Developed an effective deep multi-task framework that performs emotion classification and response generation for emotion controlled dialog generation.

KNOWLEDGE GROUNDED EMOTION DETECTION FOR DIALOGUES   *(June, 2020 – April 2021)*
- Developed a novel Context and Knowledge Enriched Transformer Framework (CKETF) in which we interpret the contextual information from the utterances using a pre-trained Bidirectional Encoder Representations from Transformers (BERT) model and leverage additive attention based hierarchical transformer for encoding the knowledge sentences.

KNOWLEDGE AND EMOTION GROUNDED DIALOGUE GENERATION   *(October, 2020 – Dec 2020)*
- Developed an effective deep multi-task framework that performs emotion classification, named entity recognition and response generation for emotion as well as knowledge controlled dialog generation.

KNOWLEDGE GROUNDED MULTIMODAL DIALOG GENERATION IN TASK-ORIENTED SETTINGS   *(Dec, 2020 – June 2021)*
- Developed a multi-modal knowledge grounded incremental transformer network to generate responses that combine information from context, visuals, and external knowledge. Also, released a Knowledge Grounded Multi-Modal Dialog (KGMMD) dataset to help users in more efficient decision making.

Banaras Hindu University (Advisor: Dr. Vivek Singh) *Varansi, India*

RESEARCH PAPER RECOMMENDATION AND AUTOMATIC CITATION RECOMMENDATION SYSTEM *(Jan, 2021 – present)*

- Developed a novel recomender system for finding the most similar research article and helping authors cite papers using automatic citation recommendation system

Publications

- 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. **Paper Link:** https://www.aclweb.org/anthology/2021.eacl-main.255/ **(Core ranking: A)**
- Varshney, Deeksha, et al. "**Natural Language Generation Using Transformer Network in an Open-Domain Setting.**" International Conference on Applications of Natural Language to Information Systems. Springer, Cham, 2020. **Paper Link:** https://link.springer.com/chapter/10.1007/978-3-030-51310-8_8 **(Core ranking: B)**
- Soumitra Ghosh, Deeksha Varshney, Asif Ekbal and Pushpak Bhattacharyya. Ghosh, Soumitra, et al. "**Context and Knowledge Enriched Transformer Framework for Emotion Recognition in Conversations**." 2021 International Joint Conference on Neural Networks (IJCNN). IEEE, 2021. **Paper link :** https://ieeexplore.ieee.org/abstract/document/9533452 **(Core ranking: B)**
- Deeksha Varshney, Anushkha Singh, Asif Ekbal. "**Knowledge Grounded Multimodal Dialog Generation in Task-oriented Settings.**" PACLIC 2021 **(Core ranking: B) Paper link :** https://aclanthology.org/2021.paclic-1.45.pdf
- Zishan Ahmad, Deeksha Varshney, Asif Ekbal and Pushpak Bhattacharyya. "**Multi-linguality helps: Event-Argument Extraction for Disaster Domain in Cross-lingual and Multi-lingual setting.**" Proceedings of the 16th International Conference on Natural Language Processing. 2019. **Paper link :** https://www.aclweb.org/anthology/2019.icon-1.16/ **(Core ranking: B)**
- Zishan Ahmad, Deeksha Varshney, Asif Ekbal and Pushpak Bhattacharyya. "**Multi-lingual Event Identification in Disaster Domain.**" **Paper link :** https://www.iitp.ac.in/ ai-nlp-ml/papers/Multilingual_Event _CICling_2019.pdf **(Core ranking: B)**

Projects

PERCURO, WIPRO *2021-present*

- Building Knowledge Grounded Question Answering System in Pharma Domain.

SANSUNG RESEARCH *2019-2020*

- Built various deep neural dialog models for chit-chat type dialogue data.

A PLATFORM FOR CROSS-LINGUAL AND MULTILINGUAL EVENT MONITORING IN INDIAN LANGUAGES-IMPRINT *2018-2019*

- Multi-Lingual Event Identification in Disaster Domain
- Multi-linguality helps: Event-Argument Extraction for Disaster Domain in Cross-lingual and Multi-lingual setting

CourseWork

PHD

- Introduction to Deep Learning
- Natural Language Processing
- Artificial Intelligence
- Foundations of Machine Learning
- Machine Learning for Intelligent Public Transport Systems

POST-GRADUATION AND GRADUATION

- C Programming and Data Structures
- Advanced Algorithms
- Operating Systems
- Database Management
- Digital Logic and Circuits
- Computer Organization and Architecture
- Theory of Computation
- Mathematical Methods
- Discrete Mathematics
- Calculus and Differential Equations
- Statistical Methods and Probability
- Statistical Inference
- Descriptive Statistics and Distribution Theory
- Sample Surveys and Design of Experiments

Program Committees

2021	**Session Chair**, PACLIC35 2021	
2019	**Volunteer**, GIAN Workshop on Introduction to Unsupervised Data Mining: From Batch to Stream Mining Algorithms	*IIT Patna*
2018-21	**Reviewer**, ACL, ACL-SRW, Expert System and Application, TALLIP	*IIT Patna*
2021	**Attendee**, Google Research Week, Amazon Research Week	*Virtual*

Referees

	Dr. Asif Ekbal, Associate Professor, Department of Computer Science & Engineering, IIT Patna, India.	*asif@iitp.ac.in*