

## About the Foreign Speaker

Soujanya Poria is an assistant professor of Computer Science at the Singapore University of Technology and Design (SUTD), Singapore and a senior scientist at A\*STAR, Singapore. He holds a Ph.D. degree in Computer Science from the University of Stirling, UK. He is a recipient of the prestigious early career research award called 'NTU Presidential Postdoctoral Fellowship' in 2018 which offers him a research grant worth US\$150,000. Before taking up his presidential fellowship position at the NTU, Soujanya was a scientist at the A\*STAR and the Temasek Laboratory, NTU. He is also (co-)PI of multiple academic and industrial grants with the amount totaling to US\$1.5 million. Soujanya has co-authored more than 70 papers, published in top-tier conferences and journals such as ACL, EMNLP, AAAI, NAACL, Neurocomputing, Computational Intelligence Magazine, etc. in the field of Natural Language Processing (NLP), multimodal sentiment analysis and dialogue systems. He is also an adjunct faculty at Indraprastha Institute of Information Technology, Delhi, India. Soujanya served as a senior PC member at AAAI 2019, IJCAI 2019 and often served as a PC member in reputed conferences such as ACL, EMNLP, IJCAI, NAACL. He was an area co-chair at NAACL 2019, EMNLP 2019 and a publicity chair at \*SEM 2019. Soujanya has given several invited talks at venues like CICLing 2018, SocialNLP 2019.

## About the Indian Speaker

Asif Ekbal is currently an Associate Professor in the Department of Computer Science and Engineering at IIT Patna. He has been pursuing research in Natural Language Processing (NLP), Information Extraction, Text Mining and Machine Learning (ML) for the last 17 years. He has authored around 200 papers in top-tier conferences like ACL, EMNLP, COLING, NAACL, and journals like PLOS One, ACM Transactions, IEEE Transaction on Affective Computing etc..

Asif has been involved in several sponsored research projects, funded by the different private agencies, such as Wipro, Flipakrt, Elsevier, Accenture, ezDI, LG, Skymap, Samsung; and Govt. agencies such as MeITY, Govt. of India, MHRD, Govt. of India, and SERB, Govt. of India etc. Recently he has served as Area Chairs in EACL, HLT/NAACL; served as the Senior PC member of AAAI, IJCAI; He regularly serves in the PC and/review committee of conferences like ACL, EMNLP, CoNLL, IJCNLP, COLING, NAACL, AAAI, IJCAI etc.

He is an awardee of "Best Innovative Project Award from the Indian National Academy of Engineering", Govt. of India, "JSPS Invitation Fellowship" from Govt of Japan and "Young Faculty Research Fellowship Award" of the Govt. of India. More details can be found at <https://www.iitp.ac.in/~asif/>.

## Course Coordinator

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## Department of CSE, IIT Patna

IIT Patna is an institute of National importance by an Act of the Indian Parliament in 2008. It is ranked 141 among BRICS nations by the QS World University Rankings of 2021. It is ranked 21 among engineering colleges in India by the NIRF 2021. The department of CSE was established in 2008 and currently offers undergraduate and postgraduate courses in Computer Science and Engineering and an undergraduate course in Artificial Intelligence and Data Science.

## IITP-AI-NLP-ML Group

The Artificial Intelligence-Natural Language Processing-Machine Learning (AI-NLP-ML) Group (<http://www.iitp.ac.in/~ai-nlp-ml/>) at Department of Computer Science and Engineering, IIT Patna has started its official journey in June, 2015. The group is dedicated to exploring the frontiers of Artificial Intelligence, Machine Learning and Natural Language Processing. There are around 45 members including Research scholars, Research engineers, Lexicographers, B.Tech & M.Tech students. Several R&D projects duly sponsored by Industries and Govt. agencies are currently being undertaken.

## Registration

Registration Link:-

<http://www.gian.iitkgp.ac.in/GREGN/index>

## Global Initiative of Academic Network (GIAN) Workshop

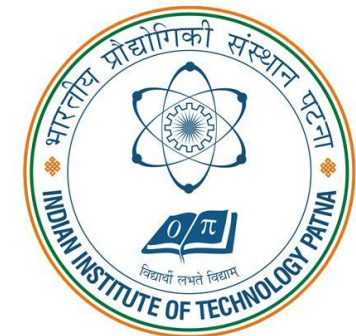
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## Deep Learning Techniques for Conversational Artificial Intelligence

April 13, 2022 –April 24, 2022 (13 days)

Organized by

IITP-AI-NLP-ML Group



Department of Computer Science and  
Engineering

Indian Institute of Technology Patna

Bihta, Bihar, India

## Overview and Importance of the Course

Thanks to the increasing rise of interest in chatbot from the industry, conversational AI (Artificial Intelligence) is a new hot research field in Natural Language Processing (NLP), Machine Learning and Deep Learning. The main goal of conversational AI is to generate a human-like conversation. However, it is a challenging task due to the complex nature of human conversations, co-reference, etc. Conversations are broadly categorized into two classes: task-oriented and chit-chat (also called as non-task oriented). Both kinds of conversations are governed by different factors or pragmatics, such as topic, interlocutors' personality, argumentation logic, viewpoint, intent, and so on. It is thus extremely important to properly model all these factors for effective conversational analysis. In this very emerging and advanced course, we will discuss the modern technologies of deep learning and word representations such as BERT, GPT-2, Seq2seq, Transformer for conversation analysis and generation. We will also take a step ahead from generation to classification by shedding light on the emotion recognition in conversation, emotion-oriented dialogue generation, conversational question-answering (QA), intent classification etc. This course will help students, faculty members, researchers and practitioners to understand both the basic and advanced techniques of conversational AI.

## Objectives of the Course

The primary objectives of the course are as follows:

- Learn about modern deep learning and NLP techniques e.g., transfer learning, transformer, Word2Vec, BERT, Discourse, Dialogues.
- Learn to create basic deep learning based models for dialogue generation.
- Learn to address various problems surrounding the conversational AI field.

## Who can attend?

- Executives, engineers and researchers from service and government organizations including R&D institutions.
- Students at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic institutions and technical institutions.

## Lecture Schedule

| S. No | Date          | Topic   |
|-------|---------------|---|
| 1     | 13 April 2022 | Introduction and Basic Concepts   |
| 2     | 14 April 2022 | Conversational AI, Recurrent Neural Networks                                      |
| 3     | 15 April 2022 | Deep Learning methods for Intent Detection and Slot Extraction, Transfer Learning |
| 4     | 17 April 2022 | Language Models for Generation  |
| 5     | 18 April 2022 | Sequence models and Reinforcement Learning  |
| 6     | 19 April 2022 | Task-oriented NLG   |
| 7     | 20 April 2022 | QA, Summarization and Multimodality   |
| 8     | 21 April 2022 | Affective Response Generation   |
| 9     | 23 April 2022 | KG driven NLG and Personalization   |
| 10    | 24 April 2022 | Examination, Evaluation and Feedbacks   |