

## About the Speaker



**Prof. Sadao Kurohashi** is currently a professor of the Graduate School of Informatics at Kyoto University, Japan. He has presented scientific papers in many national and international conferences and published in various journals and books in the field of Natural Language Processing. He is and has been a regular reviewer for several journals and conferences, and has served in program committees of many conferences.

He has been doing pioneer work in the domain of Machine Translation and Information Extraction. He has received 2009 IBM Faculty Award and 2010 NTT DOCOMO Mobile Science Award.

## Course Coordinators



**Prof. Pushpak Bhattacharyya** is a Professor of Computer Science and Engineering at IIT Bombay and currently the Professor and Director of IIT Patna. He was a Visiting research fellow in Massachusetts Institute of Technology in 1990. He is well known for his contributions to natural language processing and has several distinctions in that field. He has also currently been appointed as Vijay and Sita Vashee Chair Professor at IITB. He is the fellow of INAE and the president of ACL.

**Dr. Asif Ekbal** is currently a faculty member of the department of Computer Science and Engineering at Indian Institute of Technology Patna, India. His current research interests include Natural Language Processing, Machine Learning Applications, Information Extraction and Biotext Mining. He is the recipient of the Best Innovative Project Award from the INAE, best paper award in ICACCI 2012 etc.

**Dr. Sriparna Saha** is currently a faculty member of the Department of Computer Science and Engineering, Indian Institute of Technology Patna, India. Her current research interests include pattern recognition multiobjective optimization and biomedical information extraction. She is the recipient of the Lt Rashi Roy Memorial Gold Medal from ISI Kolkata, Google India Women in Engineering Award, 2008, Junior Humboldt Research Fellowship

etc.

## IITP\_AI\_NLP\_ML GROUP

The Artificial Intelligence-Natural Language Processing-Machine Learning (AI-NLP-ML) group at IIT Patna has started its official journey in June, 2015. The group is dedicated to explore the frontiers of Artificial Intelligence, Machine Learning and Natural Language Processing under the able guidance of Prof. Pushpak Bhattacharyya. The group also consists of other two faculty members, Dr. Asif Ekbal and Dr. Sriparna Saha, and around 20 members including research scholars, research engineers, lexicographers, B.Tech & M.Tech students. Several industry sponsored projects are currently being undertaken. Elsevier, the renowned scientific literature publishing company has set up the **Elsevier Centre of Excellence for Natural Language Processing** to conduct research and development in some of the novel areas of AI, NLP and ML. Another company, ezDI has set up the **Sushrut-eZDI Research Lab** on Health Informatics, which is dedicated towards developing products for health care and contribute to research having significant outcomes.

### ORGANIZING COMMITTEE

**Dr. Pushpak Bhattacharyya**  
Director, IIT Patna

**Dr. Asif Ekbal**  
Asst. Professor,  
IIT Patna

**Dr. Sriparna Saha**  
Asst. Professor,  
IIT Patna

### CONTACT US:

8521274830/9832669697/9007216781

Global Initiative of Academics  
Networks(GIAN) Workshop

ON

## INTRODUCTION TO NATURAL LANGUAGE PROCESSING

2nd – 7th May, 2016

Organized By  
**IITP\_AI\_NLP\_ML GROUP**



Department of  
Computer Science and Engineering,  
Indian Institute of Technology, Patna  
Bihta, Bihar, India.

## About the GIAN

Govt. of India approved a new program titled Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

## Scope of the WORKSHOP

Natural Language processing (NLP) is a field of computer science and linguistics concerned with the interactions between computers and human (natural) languages. In theory, natural-language processing is a very attractive method of human-computer interaction. Natural-language understanding is sometimes referred to as an artificial intelligence-complete problem, because natural-language recognition seems to require extensive knowledge about the outside world and the ability to manipulate it. NLP has significant overlap with the field of computational linguistics, and is often considered a sub-field of artificial intelligence. Modern NLP algorithms are grounded in machine learning, especially statistical machine learning. Research into modern statistical NLP algorithms requires an understanding of a number of disparate fields, including linguistics, computer science, statistics, linear algebra and optimization theory.

## About IIT Patna

Indian Institute of Technology Patna is an autonomous institute of education and research in science, engineering and technology located in Bihta, 35km from Patna. As of today, IIT Patna has 10 academic departments and 3 Center of Excellence that offers B.Tech, M.Tech and PhD programmes. The faculties of this institute come with academic and research training from various institutes of excellence within the country and abroad. The recent publication records of the faculty with several practical constraints appear to be outstanding. It includes many national and international journals of repute.

## Registration Fees

The Participation fees for attending the workshop is as follows:

**Participant from abroad:** US \$200

**Industry/Research Organization:** Rs. 10,000

**Academic Institutions Faculty/Staff:** Rs. 5,000

**Student/Research Scholar:** Rs. 1,000

The above fee includes all instructional materials, tutorials, and Internet facility during class hours. The participants will be provided with single bedded accommodation on payment basis on availability of hostel facilities.

## How to Apply

Please follow the link for Registration process and for further details of this workshop:

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

Workshop Registration Deadline :  
Preferably: **20<sup>th</sup> April, 2016.**

## WORKSHOP Schedule

| Day        | Session Schedule   |
|------------|--|
| 02/05/2016 | Lecture 1 :<br><i>Overview of Natural Language Processing</i>  |
|            | Lecture 2:<br><i>Formal Language Theory</i>  |
|            | Lecture 3:<br><i>N-gram Models</i>   |
| 03/05/2016 | Lecture 1:<br><i>Word Sense Disambiguation</i>   |
|            | Lecture 2:<br><i>Markov Model I</i>  |
|            | Lecture 3:<br><i>Markov Model II</i>   |
| 04/05/2016 | Lecture 1:<br><i>Part-of-Speech Tagging</i>  |
|            | Lecture 2:<br><i>Probabilistic Parsing</i>   |
|            | Lecture 3:<br><i>Machine Learning Approaches in NLP I</i>  |
| 05/05/2016 | Lecture 1:<br><i>Machine Learning Approaches in NLP II</i>   |
|            | Lecture 2:<br><i>Information Retrieval I</i>   |
|            | Tutorial:<br><i>Some problem solving using machine learning approaches in NLP</i>                                |
| 06/05/2016 | Lecture 1:<br><i>Information Retrieval II</i>  |
|            | Tutorial:<br><i>Some real-life problem solving of information retrieval</i>                                      |
|            | Lecture 2:<br><i>Machine Translation</i>   |
| 07/05/2016 | Lecture 1:<br><i>Knowledge Acquisition for NLP</i>   |
|            | Tutorial 1:<br><i>Problem solving session with examples: Parsing, Machine Translation, Information Retrieval</i> |
|            | Tutorial 2:<br><i>Problem solving session with examples: Parsing, Machine Translation, Information Retrieval</i> |