Dr. Barna Saha is an Assistant Professor in the College of Information and Computer Sciences at the University of Massachusetts Amherst. She received her Ph.D. in Computer Science from the University of Maryland College Park in August 2011. Between 2011 and 2014, she was a senior research scientist at the AT&T Shannon Research Laboratory.

Saha's main research interest encompasses developing new models of algorithm design to handle massive datasets. She works on the general areas of approximation algorithms, randomization in computation and large scale data analytics. She has published over 40 papers in the top venues of theoretical computer science and databases. She regularly serves as a committee member of conferences from both these areas. Her works won the best paper award in the prestigious Very Large Databases Conference (VLDB 2009), and was selected among the best papers in the IEEE International Conference on Data Engineering (ICDE 2012). VLDB and ICDE are among the three (the other one being SIGMOD) most premium conferences in Databases. Saha has received several awards including Google Faculty Research Award 2016, National Science Foundation CISE Research Initiation Award 2015, Yahoo! Academic Career Enhancement Award 2015 etc. In 2015, she was awarded a Simons Research Fellowship from the Simons Institute at the University of California Berkley. Earlier In 2011, she won a Dean's Dissertation Fellowship Award from the University of Maryland College Park for excellence in dissertation research.

Dr. **Maunendra Sankar Desarkar** is an Assistant Professor at IIT Hyderabad. He obtained an M.Tech. degree in Computer Science from IIT Kanpur in 2006 and PhD degree from IIT Kharagpur in 2014. He has also worked with Sybase Inc. (now part of SAP) and Samsung Research India Bangalore.

His research has won several awards and accolades such as Microsoft Research PhD Fellowship in 2009, Honorable Mention Award in Yahoo Key Scientific Challenge 2012, best paper merit award at Global Samsung Electronics Technical Forum 2013 etc. He is a part of the Data and Informatics Group (DIg) at the Department of CSE, IIT Hyderabad. His broad research interests are in the areas of Recommender Systems, Data Mining and Information Retrieval.

About IIT Hyderabad

Inventions and innovations are key themes on which the foundation of IITH is based. One of India's eight new IITs – IITH started functioning in August 2008. Currently it has 1050 students in total and offers undergraduate programs in four disciplines, M.Sc. in Chemistry and Physics, M. Tech. in six disciplines and PhD in 11 disciplines. It also offers a special programme - Executive M. Tech. in Data Sciences for industry Professionals.

The first faculty at IITH joined in 2009 and as of today IITH has 150 faculty members. In a short span of three years, IITH has developed state-of-the-art infrastructure for advanced research and produced more than 400 publications in internationally reputed journals. In a ranking recently released by the Ministry of Human Resources and Development, IIT Hyderabad is ranked at 7th position among all engineering institutes in India., and is recognized as the best among the newer IITs.

Research is a culture among the faculty and students of IITH. This is evident from the several research projects that are ongoing at IITH. On top of the gamut of sponsored projects from various funding agencies, IITH has active collaboration with industry as well. IITH also has an innovative academic program where the students are offered fractional credits and the first semester undergraduates are allowed to do a project of their choice. Many more innovations in the academic front are in the offing. IITH always strives to offer an innovative environment where one is not afraid to experiment with high-risk ideas.

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GLOBAL INITIATIVE OF ACADEMIC PROGRAMMES (GIAN)

5-Day Course on

Enabling Large Scale Data Analytics: From Theoretical Foundations to Practice (ELSDA)

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Indian Institute of Technology Hyderabad

www.iith.ac.in

Overview

The amount of data in our world has been exploding at an unforeseeable rate. The increasing volume and detail of information captured by enterprises, and the rise of multimedia, social media, and the Internet of Things are contributing to this exponential growth. Healthcare industries are promising to transform the world through "big" data. The ongoing data deluge is bringing in new opportunities in businesses, finances, and education. As we walk through this digitized age of exploded data, there is an increasing demand to develop unified toolkits for data processing and analysis. In this course our main goal is to lay the mathematical foundation of large scale data processing, develop algorithms and learn how to analyze them.

Objectives

The primary objectives of the course are as follows:

- Exposing participants to the theories behind large scale data processing algorithms
- Providing exposure to practical problems and their solutions, and understanding why the solutions work
- Enhancing the capability of the participants to perform theoretical analysis with the goal of developing practical algorithms for variety of applications.
- To develop an appreciation for current and future challenges of large scale data analytics methods in both theory and practice.

Course Outline

The following topics will be covered as part of the course. For each topic, the lectures will cover the theoretical foundations of the concept and also practical aspects.

Small-Space Algorithms, Estimating Statistical Properties, Distance Estimation
Introduction to Streaming Algorithms, Finding Similar Items, Locality Sensitive Hashing, MinHash etc.

Clustering & Ranking
K-Means, K-Median, K-Means++, Ranking, Page Rank, Rank Aggregation, Ranking under Uncertainty etc.

Algorithms over Massive Networks
Introduction to Map-Reduce Framework, Graph Algorithms on Map-Reduce, Graph Sketching, Social Network Analysis etc.

Learning Algorithms
The Perceptron Algorithm and Stochastic Gradient Descent, Strong and Weak Learning, Active learning, Deep Learning etc.

Registration Details

Registration Fee:

- Industry/ Research Organizations: Rs. 20,000
- Faculty from academic institutions: Rs. 5,000
- Undergraduate/graduate students: Rs. 1,000
- Executives enrolled in part time Masters/PhD courses at recognized institutes: Rs.12,000
- Foreign Delegates: USD 500

- Payments should be made in the form of a DD in favor of Registrar, IIT Hyderabad, Payable to SBI, IIT Kandi Branch, IFS Code: SBIN0014182.

- The DD, a copy of ID proof issued by the organization mentioned in the registration form, together with registration form should be sent to the course coordinator address mentioned overleaf.

- The above fee includes the tuition fee and the lecture notes. For lunches and refreshments on all days an additional amount of Rs. 1000/- has to be paid at the registration desk by all participants. The accommodation is to be met by participants. There are number of hotels available nearby IIT Hyderabad. Student participants will be provided with accommodation in IITH hostels for a nominal fee, subject to the availability of hostel rooms..

Important Dates

Last date for receiving applications: May 27, 2016
Course dates: June 13-17, 2016

Registration Form

Enabling Large Scale Data Analytics: From Theoretical Foundations To Practice

Title: Mr. / Ms. / Mrs. / Dr.

Name: _____

_____

Date of Birth: _____

Designation: _____

Organization*: _____

Mailing Address: _____

_____

_____

Phone: _____

Email: _____

Registration Fee Enclosed (Select one):

Rs. 1000 / Rs. 5000 / Rs. 12000 / Rs. 20000 / USD 500

Draft Details.

_____

_____

Accommodation Needed (for student participations only): Yes/No

* Proof to be submitted