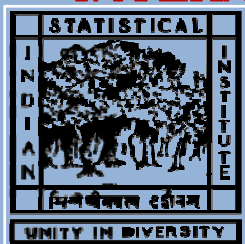


INTERACTIVE AND VISUAL APPROACHES TO DATA MINING



Indian Statistical Institute, Kolkata



30 October - 3 November, 2017



Important information:

- Number of participants for the course will be limited to fifty.
- Registration will be open from 15 September, 2017
- Last date of application is 15 October, 2017
- For further details, please visit

<http://www.isical.ac.in/~scc/GIAN-IVADM/index.html>

Venue:

Lecture Hall,
Center for Soft Computing
Research,
1st Floor, R. A. Fisher
Bhawan,
Indian Statistical Institute,
203 B.T.Road,
Kolkata-700108, India

Contacts:

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Course Coordinators:

Prof. Sanghamitra
Bandyopadhyay,
Director, ISI
(Host Faculty)

Dr. Shubhra Sankar Ray,
Associate Professor, ISI
(Co-host Faculty)

Dr. Saurabh Das,
DST-INSPIRE Faculty, ISI
(Coordinator)

Overview:

Data mining provides practical approaches and tools that allow researchers to analyze and understand their data and to craft new hypothesis. An important part of data mining is data visualization. Visualizations of data and models help researchers to uncover hidden relations, and help data mining users and data owners to understand the patterns that can lead to new discoveries and support their decision making. When data visualization is considered in combination with machine learning, their integration can be turned into a powerful data exploration tool. If properly implemented within interactive, data exploratory environment, integration of data visualization and machine learning can be used as a discovery vehicle for any data-rich environment. Wielded in the hands of a curious data owner or data explorer, such tools may turn users into data scientist regardless of their background.

The course will focus on data mining essentials and will show how to combine data visualizations and machine learning into a powerful framework for data exploration. The course will cover standard approaches to clustering, classification, regression and model selection, image and text mining, but emphasize their relatedness to data visualization and techniques that can help us in understanding of derived predictive models. **The course will be hands-on and hence will be extremely useful, in particular for research scholars and practitioners from industry and R&D laboratories.** We will focus on applications of these methods through a visual programming that, as presented through lessons of this course, will require no special training in programming. While the course will provide an introduction to inner workings and mathematics, we will focus on helping students to intuitively understand the data analysis algorithms through data and model visualization.

Who should attend :

- Executives, engineers and researchers from industry and Government organizations including R&D laboratories.
- Student at levels (M.Sc./M.Tech./Ph.D.) or Faculty from academic Institutions.

How to Apply:

One-Time GIAN Registration: Please visit

<http://www.isical.ac.in/~scc/GIAN-IVADM/index.html> and send a signed hard-copy of the filled-in application form to:

The Coordinator, GIAN-IVADM, Center for Soft Computing Research,
Indian Statistical Institute, 203, B. T. Road, Kolkata 700108.

Registration Fee

- Participants from abroad: US \$500
- Industry/ Research Organizations: Rs. 13000/-
- Academic Institutions: Rs. 7000/-

The above fees include all instructional materials, computer use for tutorials and assignments(if any). The participants will be provided with accommodation on first cum first serve and availability basis.

Faculties and Co-ordinators



Blaž Zupan is a full professor at the Faculty of Computer and Information Science, University of Ljubljana, and heads the Laboratory for Bioinformatics (<http://biolab.si>). He is also a visiting professor at Baylor College of

Medicine in Houston, USA. His main research interests are data mining, machine learning, data fusion, and data visualization. His lab develops Orange (<http://orange.biolab.si>), a popular open source data mining suite. Using visual programming, users of Orange can combine analytical components and build powerful workflows for data analytics, interactive visualization and machine learning. Zupan also initiated Frižider (“The Fridge”), the Faculty’s makerspace that is fully equipped with hardware and software for IoT experimentation and tinkering. Zupan has received a number of state, professional and student awards for research and teaching, with the most recent one being the New Europe 100 Challenger (for making data more approachable) — Changemakers in Central and Eastern Europe, presented by Res Publica, Google, Visegrad Fund and the Financial Times.



Prof. Sanghamitra Bandyopadhyay did her B Tech, M Tech and Ph. D. in Computer Science from Calcutta University, IIT Kharagpur and ISI respectively. She joined the Indian Statistical Institute in 1999, where she is now the Director.

She has also worked in various Universities and Institutes world-wide including in USA, Australia, Germany, France, China, Italy and Mexico. She has delivered invited lectures in many more countries. She has authored/co-authored more than 250 technical articles, and published six authored and edited books from publishers like Springer, World Scientific and Wiley. She has also edited journals special issues in the areas of soft computing, data mining, and bioinformatics. Her research interests include computational biology and bioinformatics, soft and evolutionary computation, pattern recognition and data mining. She is a Fellow of the National Academy of Sciences, Allahabad, India (NASI), Indian National Academy of Engineering (INAE), Indian National Science Academy (INSA), Institute of Electrical and Electronics Engineers (IEEE) and West Bengal Academy of Science and Technology. Sanghamitra is the recipient of several prestigious awards including the Dr. ShankerDayal Sharma Gold Medal and also the Institute Silver Medal from IIT, Kharagpur, India, the Young Scientist Awards of the Indian National Science Academy (INSA), the Indian Science Congress

Association (ISCA), the Young Engineer Award of the Indian National Academy of Engineering (INAE), the Swarnajayanti fellowship from the Department of Science and Technology (DST), and the Humboldt Fellowship from Germany. She has been selected as a Senior Associate of ICTP, Italy. She was awarded the prestigious Shanti SwarupBhatnagar Prize in Engineering Science, one of the most coveted awards for scientists in India. She is a JC Bose Fellow of the Department of Science and Technology.



Dr. Shubhra Sankar Ray received the M.Sc. in Electronic Science and the M.Tech. in Radio Physics and Electronics from the University of Calcutta, Kolkata, India, in 2000 and 2002, respectively, and the Ph.D. (Eng.) from Jadavpur University,

Kolkata, in 2008. He was a Post-Doctoral Fellow with the Saha Institute of Nuclear Physics, Kolkata, from 2008 to 2009. His current research activities are in Bioinformatics, granular computing, Neural Networks, Genetic Algorithms and Soft Computing. Three of his publications are listed as curated papers in Saccharomyces Genome Database, Stanford University, CA, USA. He received the Microsoft Young Faculty Award in 2010.



Dr. Saurabh Das received his Doctoral degree in 2013 in Radio Physics and Electronics at University of Calcutta, Calcutta. He received B.Sc. and M.Sc. degree in physics from University of Burdwan and Indian Institute of Technology, Roorkee, in

2004 and 2006 respectively. He is presently working as an Assistant Professor, DST INSPIRE Faculty at Center for Soft computing Research, Indian Statistical Institute, Kolkata. Earlier, he worked as an Assistant Professor under ISRO’s Space Science Promotion Scheme at Institute of Radio Physics and Electronics, University of Calcutta during 2009-2015. His area of interest includes signal propagation through the ionosphere and troposphere, atmospheric science, application of soft computing technique and big data in atmospheric science and remote sensing problems. He received Young Scientist Award in International Union of Radio Science General Assembly in Beijing, China in 2014 and URSI Asia-Pacific Radio Science conference in South Korea in 2016.