Please post

Call for Participation

II[nd] School

On

Signal, Image, Speech, and Language Processing

(April 7, 2014 – April 19, 2014)

Organized by the

DST- Centre for Interdisciplinary Mathematical Sciences (DST-CIMS)
(http://www.bhu.ac.in/CIMS),
Banaras Hindu University (BHU),
Varanasi – 221005, India. E-mail: dstcims@gmail.com

All-India Selection: **40 seats.**

Registration fee: INR 500/- via Demand Draft in favor of coordinator DST-CIMS or cash, ***after receiving the confirmation form convener.***

ELIGIBILITY

Faculty at any college / university / institution in India, post-doctoral fellow, Ph.D. degree holder, Ph.D. students, M..Sc., M.Tech, and others interested in research.

Minimum qualification:

B.Sc. (Mathematics / Statistics), M.Sc. in Mathematics / Statistics / Theoretical Physics / Computer Science, M.C.A./ M.Tech. in Electronics / Communication Engineering / Computer Science. Desirable: exposure to signal processing .

Closing date of applications: 10 March 2014

Apply on enclosed registration form to

The Coordinator / Dr. Manoj Kumar Singh
DST-Centre for Interdisciplinary Mathematical Sciences (DST-CIMS),
Banaras Hindu University (BHU), Varanasi-221005, India; E-mail: dstcims@gmail.com

Note: With all necessary documents. Advanced application can be made by E-mail (mks_kjist@yahoo.co.in, manoj.dstcims@bhu.ac.in),*but signed hard copy of the application is required for final consideration*.

About the School:

Signal processing has applications in a wide variety of human activity, ranging from processing of seismic signals to computer-assisted medical diagnosis and treatment, tracking of objects in space, and traffic control. Signal processing generally involve the recovery of information from physical observations. The processing required is relatively simple if the observation contains the information explicitly and any inference present is exactly described. Often, the physical characteristics and limitations of the devices used for observation, and / or the media through which the information is observed or communicated, make this impossible. In fact, the interference is usually random in nature and can only be described in terms of its average properties or statistics. The processing of such an observation to recover information can be termed *statistical signal processing*. This school introduces the statistical theory and algorithm used for the analysis and processing of random observation / signals and their applications to signal restoration and identification especially image, natural language and speech processing.

Target Participant:

It is a M.Sc./ M.Tech./ Ph.D. level course aimed for engineering (mechanical, electrical, electronics and communication, computer science and engineering), physical science, and social science personnel who design and conduct experiments, analyze and interpret data, models and simulate systems subjected to the random noise and disturbance. This course will help postgraduate and doctoral students in understanding mathematical and statistics tools and identifying new and challenging research problems in the area of Image processing, Natural Language Processing (NLP) , and Information Retrieval (IR), and Speech Processing.

Topics:

The following topics will be considered:

Basic of probability, statistics, basic parameter estimation methods, basic linear algebra, SVD, EVD, different least square methods, different transform, imaging system, ill-conditioned inverse problem in imaging and its solution, regularization, cross validation.

Case studies (i) Inverse problem in imaging (Denoising, Deblurring /Deconvolution) (ii) Blind source separation in speech, speech enhancement using ICA and other statistical methods, (iii) Statistical methods in natural language processing and information retrieval. (iv) Brain computer interface.

Speakers:

Prof. Umesh Singh, Dept. of Statistics, BHU, Varanasi, INDIA.

Prof. R.C. Yadav, Dept. of Statistics, BHU, Varanasi, INDIA.

Prof. Georgy Shevlyakov, St. Petersburg State Polytechnic University, RUSSIA. (Tentative)

Prof. Young Hoon Kim, Gwangju Institute of Science and Technology (GIST), South Korea.

Prof U.S. Tiwary, IIIT Allahabad, Allahabad, India.

Dr. Gyan Prakash Singh, IMS, BHU, Varanasi, INDIA.

Dr. Raj Kishor, BRA Mujaffarpur, Ex-Post Doctoral Fellow UEC, Tokyo, Japan.

Dr. Tanveer J. Siddiqui, Allahabad University, Allahabad, INDIA.

Dr. Vivek Kumar Singh, SAU, New Delhi, INDIA.

Dr. Manoj Kumar Singh, DST –CIMS, BHU.

Dr. Manoj Kumar Mukul, BIT, Mesra, Ranchi, INDIA.

Venue: CIMS, BHU, Varanasi, India.

The Centre for Interdisciplinary Mathematical Sciences (CIMS) has been established by the Department of Science and Technology, Government of India, New Delhi in Banaras Hindu University (BHU), Varanasi in November 2007 to promote research and training in all branches of Mathematics but particularly those of interdisciplinary nature. The Department of Mathematics, Statistics, Applied Mathematics and Computer Sciences are its participating departments.

Varanasi is the cultural capital of India and the melting pot of Indian civilization. There are daily domestic flights to and from Varanasi to several cities in India. Apart from the state owned Indian Airlines, there are many private air taxi operators that offer their services from Varanasi to other Indian cities. Since Varanasi lies in the heartland of the North Indian plains, it is well connected to Delhi, Kolkata, Mumbai and other parts of India. There are two railway stations in Varanasi, the Kashi Junction and the Varanasi Junction (also known as Varanasi Cantonment). Varanasi has many landmarks for tourist.

Lectures

First lecture: 8:30 – 10:30hrs; Coffee plus first problem / lab session: 10:30 - 12:00 hrs

Second lecture: 13:00 – 15:00 hrs; Coffee plus second problem / lab session : 15:00 – 16:30hrs

Third lecture: 16:30 – 18:30;

Attendance in every lecture and every problem-solving / lab session is compulsory.

No part-time attendance. Class test at end of each section, certificate will be issued to only sincere and successful candidates. Moreover, cumulative grade will appear on the certificate.

Important Dates

Last date for application : March 10, 2014.

Notification of acceptance : March 15, 2014.

How to Apply

Your application shall include following, in the prescribed format:

i. a short CV, giving information on personal and professional data.

ii. an essay (1 page maximum) explaining why you want to participate in the school and how you and your organization might benefit from your participation.

iii. Application form

Application form completed in all respect must reach by the closing date of submission of applications i.e. March 15, 2014 at the following e-mail: mks_kjist@yahoo.co.in/ manoj.dstcims@bhu.ac.in, or send the hard copy at following address:

Dr. Manoj Kumar Singh
DST –Centre for Interdisciplinary Mathematical Sciences (DST-CIMS),
(Near City Delegacy),
Faculty of Science, Banaras Hindu University (BHU),
Varanasi – 221 005. India.
Phone : + 91 – 8005434293 (Mob.)
E-mail: mks_kjist@yahoo.co.in, manoj.dstcims@bhu.ac.in
Web.: www.bhu.ac.in/CIMS

REGISTRATION FORM

IInd School

On

Signal, Image. Speech, and Language Processing

(April 7, 2014 – April 19, 2014)

Name :

(In block letters)

Present Position :

Age / Sex :

Affiliation :

Research Experience: Years : Months:

Research Area :

Number of Publications: National : International:

Whether studied/ attended any course on Probability & statistics, Linear algebra, Matrix theory, Signal Processing at undergraduate / master / research level. (If yes, please give brief outlines of the course attended)

Address for Correspondence:

Telephone Numbers: (O) (R) Mobile:

Signature of the Candidate

This is to certify that Dr. / Mr./ Ms. …… is a Faculty / Ph.D./ M.Sc. / M.Tech. student in the Department since ……

Signature and Seal of the HOD / Principal

Name and address of two referee with e-mail: i.

ii.