

Registration Fee

Academic participants - Faculty: Rs. 600/-

Student: Rs. 400/-

Industrial participant: Rs. 1000/-

The applicants are requested to send the registration fee by a crossed DD drawn in favor of "The Principal, Thiagarajar College of Engineering, Madurai -625 015." payable at Madurai. The completed registration form with registration fee should reach us on or before 20th November 2011 and addressed to:

Dr. (Mrs). G. Jothilakshmi,

Assistant Professor,

Dept of Mathematics,

Thiagarajar College of Engineering,

Madurai – 15.

Ph: 0452-2482240

Mobile : 9994021765

email : mkmat@tce.edu

Our Website : www.tce.edu



Thiagarajar College of Engineering

One - Day National Seminar on Symbolic Computing and Applications

November 25, 2011

REGISTRATION FORM

Name : _____

Designation : _____

Organization: _____

Address: _____

Phone:(O)_____ (R)_____

e-mail : _____

Registration fee particulars

Amount : _____ Bank: _____

DD No.: _____ Dated: _____

Date :

Signature

One-day National Seminar on Symbolic Computing and Applications 25th November 2011



DEPARTMENT OF MATHEMATICS
THIAGARAJAR COLLEGE OF ENGINEERING
(A Govt Aided ISO 9001 : 2008 Certified Autonomous
Institution Affiliated to Anna University)
Madurai - 625 015

Chief Patron

Thiru Karumuttu T. Kannan,
Chairman & Correspondent, TCE

Patron

Dr. V. Abhaikumar, Principal, TCE

Advisor

Dr. V. Mohan, Dean (P &A),
HOD Maths, TCE

Organizers

Dr. G. Jothilakshmi, Dr. S.Jeya Bharathi,
Dr. A.P. Pushpalatha, Dr. M.Kameswari

Dr. N.Chitra

Department of Mathematics
TCE.

About the College

Our college is located at Thiruparankundram on the outskirts of Madurai, which is well known for its world-renowned Sri Meenakshi Temple. Thiruparankundram is one of the six hill shrines of the lord Muruga. The campus is just 8 Km away from Madurai which is connected by rail and Road.

Thiagarajar College of Engineering, Madurai is one among the 19 educational and philanthropic institutions founded by late Thiru Karumuttu Thiagarajan Chettiar in the year 1957. The college is a central and state government aided institution, recognized and accredited by All India Council For Technical Education, New Delhi and affiliated to Anna University. This college was granted autonomy by the University Grants Commission in the year 1989. The College offers 7 Under Graduate courses, 14 Post Graduate courses and Doctoral Programmes in various Engineering and Science disciplines.

Objective

The purpose of this one day seminar is to create awareness among the research scholars and faculty members of ECE, IT, CSE and Mathematics so that they find new avenues for research in nontraditional computing and information processing.

This Seminar introduces the concepts of Normal Algorithms, Cellular Automata, Rajan Transform and Genomic Signal Processing.

** This Seminar do not require any

Pre-requisite.

Topics to be covered

➤ Normal Algorithms

Andrey Andreevich Markov introduced the notion of Normal Algorithm in the year 1951 with the idea of developing a universal algorithm. For any algorithm developed over an alphabet, one can construct a functionally equivalent normal algorithm over the same alphabet. Basic paradigm on normal algorithms will be introduced.

➤ Cellular Automata

A cellular automaton evolves in discrete time steps, with the value of the variable at one site being affected by the values of the sites in its neighborhood on the previous time step. The site values corresponding to a configuration at a particular time step, are updated, all at once, based on the values in their neighborhood, according to a definite set of updating rules. The resulting configuration at next time step $t+1$, is the evolved version of the one at previous time. Cellular Automata are idealized parallel processing machines. Basic paradigm on cellular automata will be introduced.

➤ Rajan Transform

Rajan Transform (RT) was introduced by Prof. E.G.Rajan in the year 1993 as more generalized form of Hadamard Transform. Unlike Hadamard Transform, RT is a homomorphic map connecting a sequence space to another. RT exhibits certain algebraic properties which could be effectively used in pattern recognition, encryption and decryption to name a few. Basic mathematical formulation of RT and its algebraic properties will be introduced. This will have its usefulness in various applications.

➤ Genomic Signal Processing

(An application of Rajan Transform)

Enormous amount of genomic and proteomic data is available in the public domain. It is becoming increasingly important to process this information in ways that are useful to scientists. The power spectrum is a transformation of the numerical representation of a characteristic sequence of DNA in the frequency space. It has an advantage that periodic patterns in the original data - hidden or latent - become clear after transformation. That is, hidden periodic signals are represented as peaks in the spectrum. Periodicity of DNA sequences has been examined by various methods including autocorrelation and auto convolution, In addition to Fourier spectrum analysis, Rajan Transform could also be used in genomic study. This seminar would highlight a study made on the importance of spectral analysis on Genome sequences using Rajan Transform.

➤ Expert Lectures by

Prof E.G.Rajan & Prof G.Chitra
Founder & President
Pentagram Research Centre (P) Ltd.,
Hyderabad
India.