

## REGISTRATION FORM

Workshop on Evolutionary Computing

**8<sup>th</sup> and 9<sup>th</sup> August 2011**

Name: .....

Designation: .....

Dept: .....

Institution/ Organization: .....

Address: .....

.....

.....

.....

.....

Phone: .....

Fax: .....

Mobile No.: .....

E-mail ID: .....

Amount (Rs): .....

DD No: .....

Dated: .....

(DD drawn in favour of "Principal, SBMJCE" payable at

Kanakapura)

Is hostel accommodation required?

Yes

No

Signature

Signature & Seal of  
Head of the Institution/  
Organization

Date:.....

## ACCOMMODATION

Accommodation can be arranged in the Jain Global Campus. Participants interested in accommodation have to send the requisition along with registration by ticking(√).

## CHIEF PATRON

Shri. R Chenraj Jain, President, Jain University Trust

## PATRONS

Dr. C G Krishnadas Nair, Chancellor, Jain University.

Dr. N Sundararajan, Vice- Chancellor, Jain University.

## ADVISORY COMMITTEE

Prof. N.G.R Iyengar, Director, IIAEM, Jain University

Dr. Y Vijaya Kumar, Dean, School of Engineering and Technology

## COORDINATORS

Dr. Ramaswamy V, Head of Computer Science and Engineering

Dr. Subramanian C, Head of Aerospace Engineering

## ORGANIZING COMMITTEE

Prof. Achutha V, HEAD of MCA

Prof. Badriprasad, HEAD of Information Science & Engineering

Prof. Venkatraman K, Department of Aerospace Engineering

Prof. Parameswaran V, Department of Aerospace Engineering

Prof. Pushpa H.G, Department of Computer Science & Engineering

Prof. Chatrapathy K, Department of Computer Science & Engineering

**JGI JAINUNIVERSITY**  
Estd. u/s 3 of the UGC Act, 1956

Jain Global Campus, Jakkasandra Post,  
Kanakapura Taluk, Ramanagara - 562 112  
Phone: (080) 27577200 Ext. 142; Fax: (080) 27577199  
Mobile: +91-9880446746 / 9448132602 / 9008647681  
URL: www.jainuniversity.ac.in  
Email: evolutionary.sbmjce@gmail.com

**JGI JAINUNIVERSITY**  
(Declared as deemed to be University u/s 3 of the UGC Act, 1956)

**Two Day National Workshop On  
Evolutionary Computing**

**8<sup>th</sup> and 9<sup>th</sup> August 2011**



**ORGANIZED BY**  
School of Engineering and Technology  
And  
International Institute for Aerospace Engineering and Management  
(IIAEM)

## ABOUT JAIN UNIVERSITY

Jain University is declared as deemed to be university u/s 3 of UGC Act 1956. It is a member of JGI group which has nearly two decades of experience in the field of education. The University offers Undergraduate, Postgraduate and Doctoral Programs in large number of fields of study.

Sri Bhagawan Mahaveer Jain College of Engineering started in the year 2005 as a constituent college of VTU has grown enormously and transformed into the School of Engineering and Technology under Jain University. The school conducts Undergraduate programs in Civil, Mechanical, Electrical, Electronics, Computer Science and Information Science. The school also conducts M.Tech programs in Electronics, Computer Science, Mechanical Engineering besides MCA. Doctoral Programs are offered in Computer Science, Mechanical Engineering, Civil Engineering, Electrical and Electronics Engineering.

## About IIAEM

IIAEM is a collaborative venture between Jain University and SIATI, an initiative never attempted by regular Universities. It has received overwhelming support from academic Institutions, R&D laboratories and industrial organization like ISRO, HAL, AAI, NAL, Air India, BIAL, CIAL and many others. Besides involving itself in cutting edge research, the institute will generate a pool of technical manpower skilled in Aircraft Design, Avionics, and Aircraft Maintenance Engineering and Airport Infrastructure & Management both at the UG,PG and Research levels. Within the next few years, the IIAEM is expected to develop into a world-class institution for Aerospace research and education.

This national level workshop is meant for students, academicians and Industry personnel who would like to enrich their knowledge in the area of evolutionary computing and also to those who would like to carry out research in the area.

## Registration Fee per Participant

Corporate -----: Rs. 3000 /-  
Academic, R&D Labs & Govt. Orgns-----: Rs. 1000 /-  
Student-----: Rs. 500 /-

Registration fee includes delegate's fee, Tea / Coffee, Working lunch & lecture material. The registration form duly signed by the Head of the Institution / Organization along with the DD drawn in favour of Principal, SBMJCE should reach us on or before 20-07-2011.

Following eminent personalities associated with the theme of the workshop are expected to deliver lectures in the workshop.

1. Prof. J.S Rao, Altair Engineering, Bangalore .
2. Prof. D.K Subramanian, (Ret), IISc, Bangalore.
3. Prof. K Chidananda Gowda, Former VC, Kuvempu University.
4. Prof. M Narasimhamurthy , IISc, Bangalore.

## Brief Introduction to Evolutionary computation

Evolutionary computation is a subfield of computational intelligence that deals with combinatorial optimization problems. It uses iterative progress such as development or growth in a population. The evolutionary computational processes resorted to are often inspired by biological mechanisms of evolution. Currently evolution strategies and computing techniques have been used for solving complex problems in engineering and science. The evolutionary computing techniques mostly involve meta-heuristic

optimization algorithms. The field of Evolutionary computation comprises Evolutionary programming, Evolution strategy, Genetic algorithms, Genetic programming, Ant Colony Optimization(ACO) and Particle swarm optimization.

Automated problem solving using the idea based on Darwinian principles originated in the 1950s and its interpretations started emerging in the 1960s. Nils Aall Barricelli started simulation work on evolution using evolutionary algorithms and artificial life in the 1960s. Alex Fraser extended its scope and published papers on simulation of artificial selection. Due to the work of Ingo Rechenberg in the 1960s and 1970s artificial evolution became a popular optimization method. John Holland through his writing made Genetic algorithm, a subset of evolutionary algorithms, made very popular. Evolutionary algorithms are more efficient in use for solving multi-dimensional problems when compared to conventional techniques.

Optimization problems invariably involve conflicting objectives such as concurrent maximization of durability and minimization of production cost. These objectives may give rise to more than one optimal solution each providing a trade-off. The classical optimization methods facilitate to find one solution at a time and to be used repeatedly to find multiple trade-off solutions. Then the designer has to evaluate the trade-offs and selects the appropriate one. There may not be an efficient method for finding multiple trade-off optimal solutions. Hence, multi-dimensional approach of evolutionary algorithms makes it helpful for solving multi-objective optimization problems. Due to its capability in finding multiple trade-off optimal solutions in a single computer simulation, evolutionary algorithms which mimic natural evolutionary principles become the natural choice.