6th INTERNATIONAL CONFERENCE on SWARM, EVOLUTIONARY AND MEMETIC COMPUTING (SEMCCO 2015)

Dec 18-19, 2015

SEMCCO2K15

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Organized by **DEPARTMENT OF CSE**

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About Hyderabad

: Hyderabad, is the capital of the southern Indian state of Telangana emerged as the foremost centre of culture in India. Hyderabad was historically known as a pearl and diamond trading centre. There are 13 universities in Hyderabad: two private universities, two deemed universities, six state universities and three central universities.

Hitech City

Hyderabad Information Technology and Engineering Consultancy City, abbreviated as HITEC City, is a major technology township which is one of the leading hubs in India. Once the capital of the great Nizams, Hyderabad is today acquiring the status of the 'cyber capital' of India. Hyderabad, a twin city along with Secunderabad, has now acquired a third dimension -H Cyberabad, a city by itself, covering 51 sq.kms. HITEC City forms the core of this new knowledge hub. Some of the other institutions which are part of Cyberabad are Indian Institute of Information Technology(IIIT), ISB, proposed golf course, botanical gardens, night safari, Engineering Staff College of India, University of Hyderabad etc.,

Charminar

The Charminar, built in 1591 CE, is a monument and mosque located in Hyderabad, Telangana, India. The landmark has become a global icon of Hyderabad, listed "Four Towers"; the eponymous towers are ornate minarets attached and supported by four grand arches.

Hussain Sagar

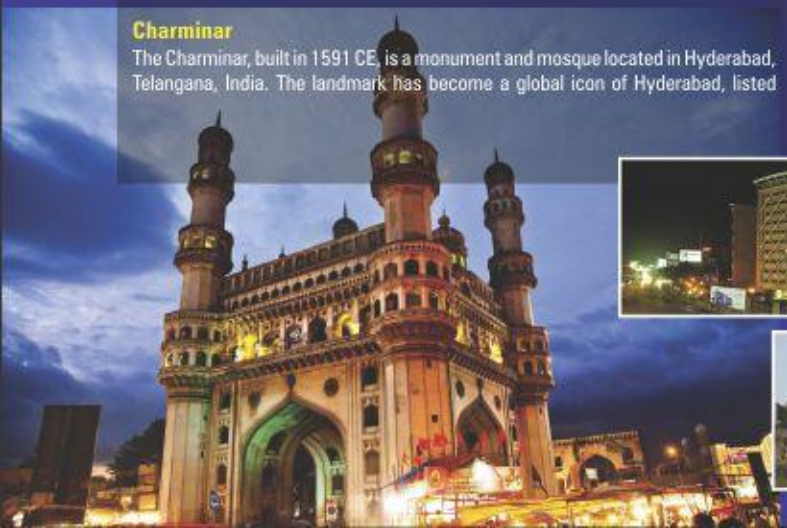
Hussain Sagar is a lake in Hyderabad spread across an area of 5.7 square kilometers and is fed by River Musi. A large monolithic statue of the Gautam Buddha, erected in 1992 stands in an island in the middle of the lake. Maximum depth of the lake is 32 feet.

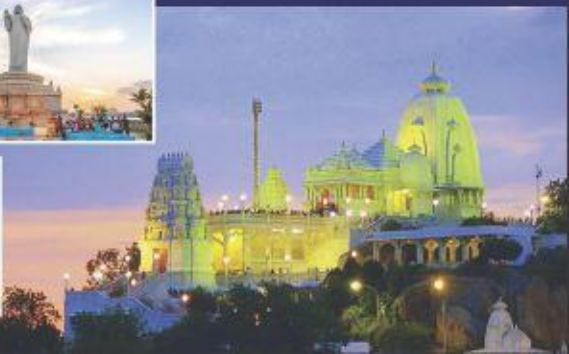
Golkonda fort

An enthralling and bewitching experience, a unique architectural and engineering marvel that is Golconda is a masterpiece and a citadel that depicts the glory of the Royal Kingdoms that ruled this region. The invincible ramparts, boulders and intricate finesse of the fort are breathtaking.

Birla Mandir

In close proximity to Hussain Sagar lies the famous Birla Mandir dedicated to lord Venkateswara. The temple is built on top of a hillock. This was constructed by the noted Industrialist GD Birla totally in marble stone. The temple attracts lot of tourists throughout the year.





CMR TECHNICAL CAMPUS

About the Institution

CMR Technical Campus has been structured to take a quantum leap on the changing trends of technology. The need of setting up the college emerged when no other college could fulfill to the aspirations of a student in his/her endeavor to acquire wholesome education. The very strength of CMR Technical Campus lies in its principles of providing the right learning environment for the student who does not have to compromise throughout the learning process of becoming global citizen. Over the years since it has been established, there has been dynamic progress at CMRTC in all academic and research activities, and a spectacular improvement in facilities and infrastructure, to keep it on par with the best institutions in India. The campus epitomizes the Technical Campus motto, "Learning and Exploring" in providing the best of infrastructure and ambience. CMR Technical Campus keeps abreast of the global situation.

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- CMRTC is the youngest college to be accredited by National Board of Accreditation (NBA) in the State of Telangana.
- Recognized under Section **2(f) & 12(B) of UGC act 1956.**
- Received CSI **"Best Accredited Student Branch"** Award for the Academic Year 2013-14 of Region V.
- Received **"Best Accredited Student Branch"** Award for the CSI Annual Convention 2015.
- Permanently Affiliated to **JNTU, Hyderabad.**
- Received Center of Excellence award by **HR Club** Mumbai as a part of Campus2Corporate & **Best Institution in Hyderabad.**
- The CMR Technical Campus has been awarded as a **Remote Resource Centre** from Hyderabad and Ranga Reddy districts by IIT Bombay Spoken Tutorials, which is an initiative of National Mission on Education through ICT, funded by MHRD.
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6th INTERNATIONAL CONFERENCE on SWARM, EVOLUTIONARY AND MEMETIC COMPUTING (SEMCCO 2015)

The SEMCCO 2015 is the sixth international conference of this series, where SEMCCO 2010 has been successfully organized at SRM University Chennai, SEMCCO 2011 at ANITS, Visakhpatnam, SEMCCO 2012 at SOA University, Bhubaneswar, SEMCCO 2013 at SRM University, Chennai and SEMCCO 2014 at SOA University, Bhubaneswar.

This conference aims at bringing together researchers from academia and industry to report and review the latest progresses in the cutting – edge research with Swarm, Evolutionary, Memetic Computing to explore new application areas and to design new bio – inspired algorithms for solving specific hard optimization problems and finally to create awareness on these domains to a wider audience to practitioners. Therefore, researchers are encouraged to submit their contributions in both theoretical and practical aspects.

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Conference Theme: The authors are encouraged to submit previously unpublished original research papers, which are not under consideration for publication elsewhere.

- Genetic Algorithms
- Genetic Programming
- Evolutionary Programming and Evolution Strategies
- Combinatorial Optimization and Metaheuristics
- Artificial Immune Systems (AIS)
- Differential Evolution (DE)
- Particle Swarm Optimization (PSO)
- Ant Colony Optimization (ACO) and Ant Systems
- Bacterial Foraging Algorithms (BFA)
- Harmony Search (HS)
- Cultural Algorithms
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- Artificial Life and Digital Organisms
- Swarm Robotics, Evolvable Hardware
- Learning Classifier Systems
- Estimation of Distribution Algorithms (EDA)
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- Adaptation in Evolutionary Systems
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- Common Sense Computing
- Membrane Computing
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SEMCCO2K15

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Registration Fee:

Delegates Type	Fee
Student	Rs. 500/-
Faculty / Research Scolor	Rs. 750/-
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Day 1 Schedule : Friday 18th December, 2015

09.00 am to 10.15 am - Registration
10:15 am to 11:00 am - Inaugural Session
11:00 am to 11:15 am - Tea Break
11:15 am to 01:00 pm - Keynote by Prof. Sureshchandra Satapathy on "Machine Intelligence and its Engg Applications "
01:00 pm to 02:00 pm - Lunch Break
02:00 pm to 04:00 pm - Keynote by Prof.(Dr.) Swagatam Das on "Swarm Intelligence and its Engg Applications "

Day 2 Schedule : Saturday 19th December, 2015

08.45 am to 10.15 am - Registration
10:15 am to 11:00 am - Inaugural Session
11:00 am to 11:30 am - Tea Break
11:30 am to 12:15 pm - Keynote by Dr. Panigrahi
12:15 pm to 01:00 pm - Track-I
01:00 pm to 02:00 pm - Lunch Break
02:00 pm to 03:00 pm - Keynote by Dr. Suganthan. P. N
03:00 pm to 05:00 pm - Track-II

Accommodation & Transportation

Accommodation can be provided to outstation delegates on payment basis on prior request in Hotels/Guest Houses situated at a convenient distance from CMR Technical Campus.

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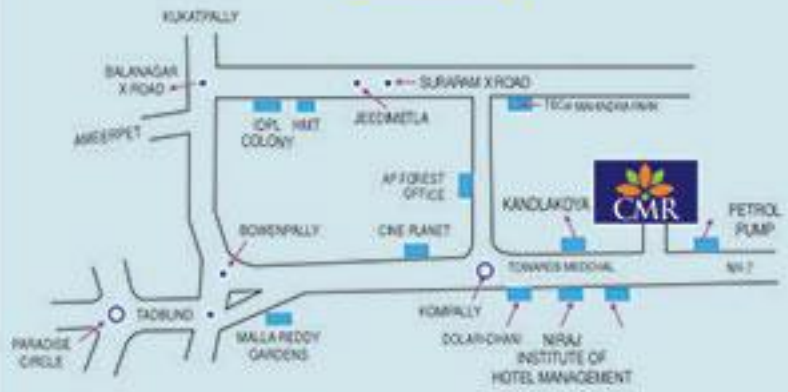

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The 6th International Conference on Swarm, Evolutionary and Memetic Computing

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It will be a great pleasure for us to have you on the occasion of ***"Inaugural Ceremony on 18th 2015"*** *Scheduled from 10:00 AM to 11:00 AM. Paper Presentations by Research Scholars, Faculty Members and Students.*

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6th International Conference on Swarm, Evolutionary and Memetic Computing

(SEMCCO2016)

18th -19th December, 2015

Pre-Conference Tutorials- December 18th 2015(Friday)

Timings		Sessions
09.00-09:45 am	:	Registration
10.00-11:00 am	:	Inaugural Session
11:00-11:15am	:	Tea Break
11.15-12.15pm	:	Tutorial -1 Prof. Dr. S. C. Satapathy: Machine Intelligence and its Engineering Applications.
12.15-01.15pm	:	Tutorial -2 Prof. Dr. Swagatam Das: Swarm Intelligence and its Engineering Applications.
01.15-02.15pm	:	**Lunch**
02.15-04.15pm	:	Technical Session-1
02.15-02.35pm		Black Hole Artificial Bee Colony Algorithm **------Nirmala Sharma,Harish Sharma A.Sharma and J.C.Bansal**
02.35-02:55pm	:	Optimum Clustering of Active Distribution Networks using Back Tracking Search Algorithm **—Reham A,O Dr.RK Saket and Anand Kumar**
02:55-03.15pm	:	Empirical Assessment of Human Learning Principles inspired PSO Algorithms on Continuous Black-Box Optimization Testbed **----M.Rizwan Tanweer ,Abdullah Al-Dujali and Suresh S**
03.15-3.35pm	:	MR Image segmentation based on Improved Hyper KFCM (IHKFCM) Clustering Algorithm and Modified Level Set Method using Radon Transform **--- T.Saikumar**
03.35-03.55pm	:	An Ant Colony Optimization approach for the Dominating Tree Problem **--- Shyam S,Sachchida N C and Alok S**
03.55-04.10	:	Variance based Particle Swarm Optimization for Function Optimization and Feature Selection **--Yamuna Prasad, K. K. Biswas, M. Hanmandlu, and Chakresh Kumar Jain**

Conference Day 2- December 19, 2015(Saturday)

Timings		Sessions
09.00-09:45 am	:	Registration
10.00-11:00 am	:	Inaugural Session
11:00-11:15am	:	Tea Break
11.15-12.15pm	:	**Keynote Address by Dr B.K. Panigrahi, IITD**
		Track:1
12.15-12.35pm	:	Particle Swarm Optimization based on winner's strategy **----Shailendra Aote**
12.35-12.55pm	:	Genetic Algorithm Based Speed Control of Electric Vehicle with Electronic Differential **----D.Nair and Febin Daya**
12.55-01.15pm	:	Diagnosis of Parkinson Disease Patients using Egyptian Vulture Optimization Algorithm **---Adiya Dixit ,Alok Sharma Ankur Singh and Anupam Shukla**
01:15-02.15pm	:	**Lunch**
02.15-04.15pm	**:**	**Technical Sessions-1**
02.15-02.35pm	:	Robot workcell layout Optimization using firefly algorithm **--- Akif M.A, Ponnambalam S G ang Kanagarj G**
02.35-02:55pm	:	A Gravitational search algorithm for energy efficient multi-sink placement in wireless sensor networks **--- C.S Rao, Haider Banka and P.K Jana**
02:55-03.15pm	:	Particle Swarm Optimization for the Deployment of Directional Sensors **---Pankaj S, S.Mini and Ketan S**
03.15-3.35pm	:	A Hybrid Genetic Algorithm using Dynamic distance in mutation operator for solving MSA problems **----Rohit Yadav, Haider Banka**
03.35-03.55pm	:	Analysis of Next-Generation Sequencing data of miRNA for the Prediction of Breast Cancer **---Macro P,Debotosh B,Ujjwal M, Dariusz P**
03:55-04:15pm	:	An Efficient Data Mining and Ant Colony Optimization technique for healthcare data **---Dr. Sangeetha Y,G.J. Laxmi.**
04.15-04.30	:	Hybridizing cuckoo search with bio-inspired algorithms for constrained optimization problems **--- Kanagarj G, Ponnambalam S G ang Gandomi A.H**

Conference Day 2- December 19, 2015(Saturday)

Timings		Sessions
Track:2		
12.15-12.35pm	:	Gravitational Search Algorithm based Energy Efficient Clustering for Wireless Sensor Networks. **--- C.S Rao, Haider Banka and P.K Jana**
12.35-12.55pm	:	Development of back propagation neural network model for prediction of combustion parameters of a diesel engine. **--- Shailaja and A V Sita Rama Raju**
12.55-01.15pm	:	A Hybrid EMD-ANN Model for Stock Price Prediction **--- D Jothimani ,Ravi S and S S Yadav**
01:15-02.15pm	:	**Lunch**
02.15-04.15pm	**:**	**Technical Sessions-2**
02.15-02.35pm	:	Multi-objective power dispatch using stochastic fractal search algorithm and TOPSIS **--- Hari M Dubey, M Pandit, B. k. Panigrahi and T Tyagi**
02.35-02:55pm	:	An Improved Quantum Immune Clone Optimization Algorithm **---- Suresh Dara**
02:55-03.15pm	:	Hybrid Firefly algorithm and Particle Swarm Optimization for the detection of Bundle Branch Block **---- Padamavathi K and S R K Kalva**
03.15-3.35pm	:	Region Based Multiple Features for an Effective Content Based Access Medical Image Retrieval an Integrated with Relevance Feedback Approach. **---B Jyothi ,Madhaveelatha Y, KrishnaMohan P G and VSK Reddy**
03.35-03.55pm	:	Design, Construction & Analysis of Dataset for Indian Road Network and Performing Classification to Estimate Accuracy of Different Classifier and its Comparison Summary Evaluation **---- Suwarna G**
03:55-04:15pm	:	Visual Cryptography based Lossless Watermarking for Sensitive Images **---Dr. B.Surekha**
04.15-04.30pm	:	Cohort Intelligence and Genetic Algorithm along with AHP to recommend an Ice Cream to a Diabetic Patient **--- Suhas M G**
04.30-04.40pm	:	A Novel BFO-Gabor Algorithm Applied to Face Classification **---- Lingraj Dora, Sanjay A and Rutuparna P**

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Swarm, Evolutionary, and Memetic Computing

6th International Conference, SEMCCO 2015
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Preface

This LNCS volume contains the papers presented at the 6th Swarm, Evolutionary and Memetic Computing Conference (SEMCCO 2015) held during December 18–19, 2015, at CMR Technical Campus, Hyderabad, India. SEMCCO is regarded as one of the prestigious international conference series that aims at bringing together researchers from academia and industry to report and review the latest progress in cutting-edge research on swarm, evolutionary, memetic computing, and other novel computing techniques like neural and fuzzy computing, to explore new application areas, to design new bio-inspired algorithms for solving specific hard optimization problems, and finally to raise awareness of these domains in a wider audience of practitioners.

SEMCCO 2015 received 150 paper submissions from 12 countries across the globe. After a rigorous peer-review process involving 400 reviews in total, 40 full-length articles were accepted for oral presentation at the conference. This corresponds to an acceptance rate of 27 % and is intended for maintaining the high standards of the conference proceedings. The papers included in this LNCS volume cover a wide range of topics in swarm, evolutionary, memetic, and other intelligent computing algorithms and their real-world applications in problems selected from diverse domains of science and engineering.

The conference featured the following distinguished keynote speakers: Dr. P.N. Suganthan, NTU, Singapore, and Dr. Rammohan Mallipeddi, Kyungpook National University, South Korea.

We take this opportunity to thank the authors of all submitted papers for their hard work, adherence to the deadlines, and patience with the review process. The quality of a refereed volume depends mainly on the expertise and dedication of the reviewers. We are indebted to the Program Committee/Technical Committee members who not only produced excellent reviews but also did so in the short time frames that they were given.

We would also like to thank our sponsors for providing all the logistic support and financial assistance. First, we are indebted to Management and Administrations (faculty colleagues and administrative personnel) of CMR Technical Campus, Hyderabad. We thank Prof. Carlos A. Coello Coello, and Prof Nikhil R. Pal, the General Chairs, for providing valuable guidelines and inspiration to overcome various difficulties in the process of organizing this conference. We would also like to thank the participants of this conference. Finally, we would like to thank all the volunteers for their tireless efforts in meeting the deadlines and arranging every detail to make sure that the conference could run smoothly. We hope the readers of these proceedings and the participants of the conference found the papers and conference inspiring and enjoyable.

December 2015

Bijaya Ketan Panigrahi
P.N. Suganthan
Swagatam Das
S.C. Satpathy

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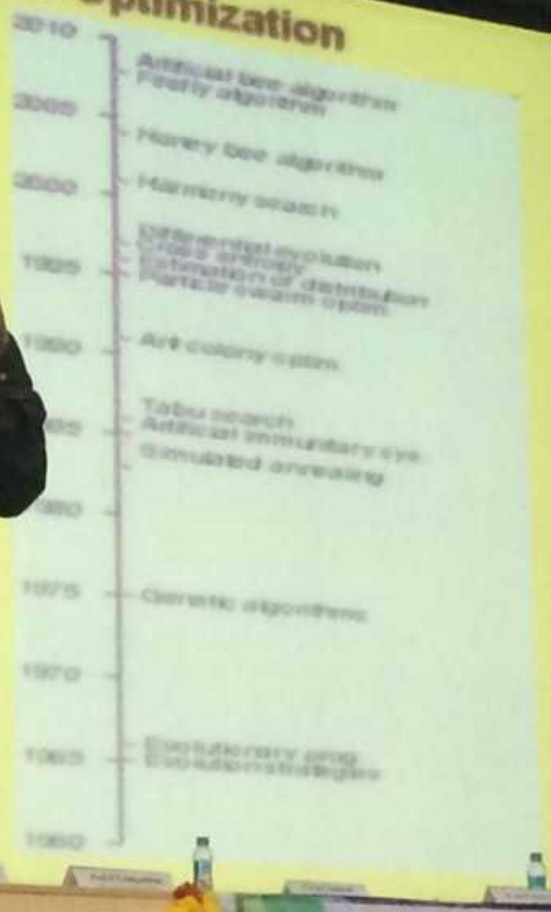
Metaheuristics for Real-Parameter Optimization

A metaheuristic is a heuristic meth
solving a very general class
computational problems by comb
user-given black-box procedure
usually heuristics themselve
the hope of obtaining a mor
more robust procedure. The
the Greek prefix "meta" ("
in the sense of "higher level
(from ευρισκειν, heurisk



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