

IEEE Congress on Evolutionary Computation

May 18 – 21, 2009, Trondheim, Norway

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CALL FOR PAPERS CEC 2009



Sponsored by IEEE Computational Intelligence Society (IEEE CIS)

Co-sponsored by the Evolutionary Programming Society (EPS) and the Institution of Engineering and Technology (IET)

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The annual IEEE Congress on Evolutionary Computation (CEC) is one of the leading events in the area of evolutionary computation. It covers all topics in evolutionary computation, including,

- Ant colony optimization
- Artificial life
- Bioinformatics & bioengineering
- Coevolution & collective behavior
- Combinatorial & numerical optimization
- Constraint & uncertainty handling
- Evolutionary data mining
- Evolutionary games
- Evolutionary learning systems
- Evolvable hardware & software
- Evolving neural networks & fuzzy systems
- Molecular & quantum computing
- Particle swarm intelligence
- Representation & operators
- Artificial immune systems
- Autonomous mental & behavior development
- Cognitive systems & applications
- Computational finance & economics
- Estimation of distribution algorithms
- Evolutionary design
- Evolutionary intelligent agents

CEC 2009 will feature a world-class conference that aims to bring together researchers and practitioners in the field of evolutionary computation and computational intelligence from all around the globe. Technical exchanges within the research community will encompass keynote speeches, special sessions, tutorials and workshops, panel discussions as well as poster presentations. On top of these, participants will be treated to a series of social functions, receptions and networking sessions, which will serve as a vital channel to establish new connections and foster everlasting friendship among fellow counterparts.

Call for Contributed Papers

Prospective authors are invited to contribute high-quality papers to CEC2009. All papers are to be submitted electronically through the Congress website. For general inquiries, please contact General Chair Andy Tyrrell at amt@ohm.york.ac.uk. For program inquiries, contact Program Chair Pauline Haddow at Pauline.Haddow@idi.ntnu.no.

Call for Special Sessions

CEC 2009 Program Committee solicits proposals for special sessions within the technical scopes of the congress. Special sessions, to be organised by internationally recognised experts, aim to bring together researchers in special focused topics. Papers submitted for special sessions are to be peer-reviewed with the same criteria used for the contributed papers. Researchers interested in organising special sessions are invited to submit formal proposals to the Special Session Chair Jon Timmis at jt517@ohm.york.ac.uk. A special session proposal should include the session title, a brief description of the scope and motivation, names, contact information and brief CV of the organisers.

Call for Tutorials

CEC 2009 will also feature pre-congress tutorials covering fundamental and advanced computational intelligence topics. A tutorial proposal should include title, outline, expected enrolment and presenter biography. Tutorials are expected to run for 2 hours each. Researchers interested in organising tutorials are invited to submit formal proposals to the Tutorial Chair Stephen Smith at sls@ohm.york.ac.uk.

Woman in Computational Intelligence (WCI)

The organising committee encourages women to submit to CEC09 and to participate in the conference. To find out about WCI please look at <http://smile.ee.ncku.edu.tw/WCI/>.

Information and Enquiry
Website: www.cec-2009.org
Email: cec09@idi.ntnu.no



Important dates	
Special Session proposals	September 1, 2008 ✓
Paper submissions	14th Nov November 1, 2008
Tutorial proposals	December 1, 2008
Notification of acceptance	6th Feb January 16, 2009
Final paper submission	27th Feb February 16, 2009

2009 IEEE Congress on Evolutionary Computation (CEC 2009)

The 2009 IEEE Congress on Evolutionary Computation (CEC 2009) was held at the Nova Conference Centre and Cinema, Trondheim, Norway during May 18th-21st, 2009. CEC 2009 was the eleventh occurrence of this major event in the evolutionary calendar. It was also the first time IEEE CEC has been held in Scandinavia.

The IEEE Congress on Evolutionary Computation (CEC) has provided a forum for established and newer researchers alike to present high quality contributions to the field of evolutionary computation for the last ten years. CEC 2009 was no exception. 723 submissions were received from 57 countries across the world. These submissions were thoroughly reviewed by our expert team of over 800 reviewers, producing over 2800 reviews. The high quality of the submissions and acceptance rates of 45% for oral and 20% for poster accept meant that the high technical standard we come to expect from CEC was maintained.

Sponsored by the IEEE Computational Intelligence Society and cosponsored by the Evolutionary Programming Society, and the Institution of Engineering and Technology, CEC 2009 featured state-of-the-art plenary speeches, parallel regular sessions, focused special sessions (our team of 80 special session chairs provided focused special sessions and worked hard to attract high quality submissions and chaired the review process of their own tracks. Thanks to all for



A group of participants at CEC 2009, including General Chair Andy Tyrrell.

their hard work and enthusiasm), interactive poster sessions, informative pre-congress tutorials and entertaining social functions. Three excellent plenary speeches by world authorities were given: Kalyanmoy Deb on 'Evolution's Niche in Applied Optimization and Informatics'; Richard Jones on 'Soft Machines: What Nanotechnology can learn from Biology'; and Harris Wang on 'Synthetic Biology, Accelerated Evolution and Exploring Diversity in Biological Systems'. These were all excellently presented and received by the audience with interest and enthusiasm.

Twelve pre-congress tutorials by leading researchers in the field were given, by: Xin Yao, Kenneth De Jong, Riccardo Poli, Edmund Burke, Gusz Eiben, Kalyanmoy Deb, Simon Lucas, Andries Engelbrecht, Julian Miller, Edward Tsang, Jim Torresen, Lukas Sekanina, Clare Bates Congdon and

Dan Ashlock. All were very well attended (in some cases standing room only!) with some excellent feedback from attendees.

Simon Lucas once again organized a great set of competitions including: Unreal Tournament 2004 Deathmatch, TORCS-based Car Racing, Software Agent Ms Pac-Man and Ms Pac-Man Ghost Team Challenge.

In addition to the excellent technical programme we also had a number of social events arranged, including: Welcome reception with the mayor, Reception, Conference Dinner and a Conference Pub (every day of CEC). In addition, people arriving before the 17th May were able to witness the festive atmosphere that is associated with Norwegian National Day (very colorful and noisy!). Also arranged was a special Schooling & Child Care Facilities for delegate that brought their children to Norway.

Thanks go to Pauline Haddow (Programme Chair), Jon Timmis (Special Sessions Chair), Stephen Smith (Tutorial Chair), David Halliday, Kay Chan Tan and Dragana Laketic (Finance Chairs), Morten Hartmann and Cristina Costa Santini (Local Chairs), Andrew Greensted (Publicity Chair) and Gunnar Tufta (Poster Session Chair) for their wonderful work to



Keynote speech given by Prof. Richard Jones.

make IEEE CEC 2009 a success. Finally but not least, a special thanks goes to our Technical Chairs: Carlos Coello Coello, Garry Greenwood, Emma Hart; Jong-Hwan Kim, Chrystopher Nehaniv, Gianluca Tempesti and Ali M.S. Zalzala for providing their expertise and their time to CEC, not only to handle all the general submissions but also to guide their special session chairs.

CEC 2009 provided a stimulating forum for scientists, engineers, educators, and students from all over the world to disseminate their latest research findings and exchange information on emerging areas of research in the fields. It proved to be a great success and we all look forward to meeting up again in Barcelona next year for IEEE WCCI 2010 and in New Orleans for IEEE CEC 2011.

Please visit the congress website at <http://www.cec-2009.org/> for conference photos.



2009 International Joint Conference on Neural Networks (IJCNN 2009)

Robert Kozma
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The 2009 International Joint Conference on Neural Networks (IJCNN2009) has been held at the Westin PeachTree Hotel, Atlanta, GA, USA, on June 14-19, 2009. IJCNN is the premier international conference on neural networks theory, analysis and applications. Our conference has been organized by the International Neural Networks Society (INNS) and sponsored jointly by INNS and the IEEE Computational Intelligence Society (CIS). This is an exemplary collaboration between the two leading societies on neural networks to create the flagship conference, under the leadership of INNS President Nik Kasabov and CIS President David Fogel. This mutually beneficial cooperation provides solid foundations for future extensive development of the field.

In 2009 the conference theme has been “The Century of Brain Computation – Neural Network Alliances with Cognitive Computing and Intelligent Machine Embodiments.” Studies into

higher cognition and brain functions represent an ultimate frontier of scientific research. Neural network approaches have demonstrated their excellent potential to support fundamental theoretical and practical research in this area. IJCNN is a truly interdisciplinary event with a broad range of papers on recent advances in neural networks and related areas, including neuroscience and cognition, robotics, machine learning, neuroinformatics and bioinformatics, signal processing, hybrid systems and soft computing, hardware implementations, intelligent tools and techniques, and real world implementations. Out of the 710 submissions, 519 have been finally accepted to the conference program, giving an acceptance rate of 73%. This is remarkable as it indicates that IJCNN2009 has been successful in defying the negative trend caused by world economic crisis. The final program of the conference reflects the broad international impact of neural network science with authors from 52 countries and from six continents of the world.

IJCNN2009 featured extremely successful plenary talks at the start of the morning and afternoon sessions by: Gail Carpenter (recipient of 2008 IEEE NN Pioneer Award), Leon Chua, Robert Desimone, Eugene Izhikevich, Edgar Koerner, John Taylor (2009 IEEE NN Pioneer Award), Bernard Widrow, and John Hopfield (IEEE Rosenblatt Awardee 2009), coordinated by Jacek Zurada, Plenary Chair. The program included highly anticipated Invited Talks by world-renowned speakers: Vladimir Cherkassky, Walter J Freeman, Steven Grossberg, Peter Erdi, Nikola Kasabov, Vladimir Vapnik, Paul Werbos, and Jun Zhang. IJCNN2009 celebrated the 50th anniversary of the invention of the Least Mean Squares (LMS) learning algorithm, and had a panel session on the 50th anniversary organized by Jennie Si, Robert Kozma, and Irwin King, with panelists including Bernie’s disciples Ted Hoff, John Treichler, Dick Johnson, and Lloyd Griffiths. Other successful panel sessions included review of government interest in neural nets organized by Leonid Perlovsky,

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