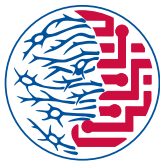# The 2009 International Joint Conference on Neural Networks

Final Program

June 14-19, 2009

Westin Peachtree Plaza

Atlanta, Georgia USA

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The 2009 International Joint Conference on Neural Networks

IJCNN 2009 Conference Proceedings

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Welcome from the General Chair

On behalf of the Organizing Committee, I would like to welcome all of you who came to Atlanta to participate in the 2009 International Joint Conference on Neural Networks. IJCNN is the premier international conference on neural networks theory, analysis, and applications. Our conference is organized by the International Neural Networks Society (INNS) and sponsored jointly by INNS and the IEEE Computational Intelligence Society. This is an exemplary collaboration between the two leading societies on neural networks and it provides solid foundations for future extensive development of the field. In 2009, the conference theme is "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, computational intelligence and machine learning, and various soft computing technologies.

We are very proud to present an excellent program with 519 papers in poster and oral sessions, which represent the best up-to-date results in their respective research areas. Decisions about poster versus oral presentations do not reflect quality preference, rather they are based on programmatic constraints aiming at a balanced representation of the diverse topics. Our program features highly anticipated plenary talks by Gail Carpenter, Leon Chua, Robert Desimone, Eugene Izhikevich, Edgar Koerner, John Taylor, Bernard Widrow, and John Hopfield, as well as invited talks by world-renowned speakers: Michael Arbib, Vladimir Cherkassky, Steven Grossberg, Peter Erdi, Nikola Kasabov, Vladimir Vapnik, Paul Werbos, and Jun Zhang. The program has 15 Special Sessions organized around specific focus areas, 16 pre-conference tutorials, 4 post-conference workshops, and a professional tour to the Emory neuroscience facilities. In short, IJCNN with its various activities gives an excellent snapshot of the neural network research and it reflects the dynamics of our field.

The organization of IJCNN is based on very strong volunteer involvement, and it is supported by the skillful professional help of The Rees Group Management Services. Our volunteers included the over 700 reviewers providing close to 3000 quality reviews. Based on their work, every contributed paper received at least three reviews. Our work has been supported by the 100 member strong Program Committee, who played a key role in coordinating the reviews, formulating the acceptance/rejection decisions, and completing other programmatic tasks. Out of the 710 submissions, 519 have been finally accepted to the conference program, giving an acceptance rate of 73%. 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. Following the traditions, the *Neural Networks* journal (Elsevier) will have a Special Issue containing extended versions of selected papers presented at IJCNN. Special thanks are due to our corporate and academic sponsors who helped us in a very significant way to achieve the goals of our meeting.

I highly appreciate the time and energy spent by our volunteers who helped us to make IJCNN a great success. At the fundamental level, I would like to emphasize the significance of the work of the Reviewers and the Program Committee. Thank you very much for the days, and often nights, spent on producing the quality reviews. The members of the Organizing Committee worked diligently in various areas of activity towards the common goal. Ganesh Kumar Venayagamoorthy as Chair of the Technical Program Committee did a phenomenal work in coordinating various aspects of our work, and Steven Bressler and Leonid Perlovsky provided critical help in coordinating the reviews and in programmatic aspects of the conference. There are so many more people that helped in various ways, so it is difficult to name just a few. Still, I want to emphasize the high-quality professionalism of Tom Cholewo as our Web Reviews Chair, Bill Howell as Publicity Chair, and Ayanna Howard as Local Organizing Committee Chair.

As a former INNS Special Interest Groups (SIG) Chair, I want to call the attention to the very important grass-root support provided by regional and topical SIGs. SIGs contributed to our field, and to IJCNN, in various ways, by initiating and sponsoring Special Sessions, Workshops, publishing newsletters, coordinating regional activities, and speaker exchanges. An excellent example is the Earth and Environmental Sciences (EES) SIG, spearheaded by Vladimir Cherkassky, Vladimir Krasnopolsky, Dimitri Solomatine, and Julio Valdez. In the past years they organized

very successful Special Sessions, and from this year EES became one of the regular IJCNN research topics. This indicates the dynamic evolution of our research field, and provides great example for others to follow.

Atlanta provides an excellent environment for our conference at the Westin Peachtree Plaza Hotel – the second tallest hotel in the Western Hemisphere. The world famous CNN building is within walking distance, the Aquarium and a number of other touristic attractions provide excellent opportunities beyond the conference's professional schedule for our attendees and their families. Special thanks are due to Mary-Lou Padgett who coordinates cultural and family activities.

I wish you a productive and enjoyable time during your stay in Atlanta.

Robert Kozma, General Chair, IJCNN2009
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Wiering, Marco
Wojtusiak, Janusz
Wong, Francis
Woodley, Robert
Wu, Tung-Kuang
Wunsch, Donald
Xu, Dongming
Xu, Jianwu
Xu, Jun
Xu, Peng
Yamada, Walter M.
Yamaguchi, Yoko
Yamakawa, Takeshi
Yan, Ruqiang
Yang, Yi
Yang, Yingjie
Yanushkevich, Svetlana
Yen, Gary
Yi, Jianqiang
Yildirim, Tulay
Yin, Hujun
Yoo, Jiho
Younger, A. Steven
Yu, Ting
Yu, Wen
Yu, Wen-Shyong
Zanchettin, Cleber

Zarate, Luis
Zegers, Pablo
Zell, Andreas
Zeng, Shuqing
Zeng, Zhigang
Zhang, Boyun
Zhang, Guangfan Zhang
Zhang, Hong
Zhang, Hongming
Zhang, Huaguang
Zhang, Nian
Zhang, Ruimin
Zhang, Xiaohui
Zhang, Xin
Zhang, Xuejie
Zhang, Yong
Zhao, Hai
Zhao, Qiangfu
Zhao, Yan
Zhao, Yi
Zheng, Chunhou
Zhora, Dmitry
Zhu, Bin
Zorat, Alessandro
Zou, Weibao
Zunino, Rodolfo
Zuo, Xingquan

Conference Topics

A. Connectionist Methods in Cognitive Science
- A.1 Cognitive modeling
- A.2 Emergent intelligence
- A.3 Attractor networks and associative memory
- A.4 Speech and language
- A.5 Vision
- A.6 Consciousness
- A.7 Other

B. Computational Neuroscience
- B.1 Brain-based models
- B.2 Analysis of neural data
- B.3 Neural dynamics, complex systems, and chaos
- B.4 Self-organizing maps
- B.5 Neuro-technology
- B.6 Brain-machine interfaces
- B.7 Other

C. Robotics
- C.1 Cognitive
- C.2 Developmental
- C.3 Neural
- C.4 Other

D. Machine Learning
- D.1 Supervised learning
- D.2 Unsupervised learning
- D.3 Reinforcement learning
- D.4 Support vector machines
- D.5 Kernel methods
- D.6 Bayesian Models
- D.7 Other

E. Neuroinformatics & Bioinformatics
- E.1 Tools and methods
- E.2 Data bases
- E.3 Data mining
- E.4 Other

F. Signal Processing
- F.1 Image processing
- F.2 Machine vision
- F.3 Time series analysis
- F.4 Prediction and forecasting
- F.5 Other

G. Hybrid Systems
- G.1 Neuro-symbolic
- G.2 Neuro-fuzzy
- G.3 Neuro-evolutionary
- G.4 Neuro-swarm
- G.5 Neuro-dynamic logic
- G.6 Other

H. Hardware Implementations
- H.1 Neural chips
- H.2 Cellular neural networks
- H.3 Neuromorphic engineering
- H.4 Other

I. Intelligent Tools and Methods
- I.1 Expert Systems
- I.2 Adaptive dynamic programming and neuro-dynamic optimization
- I.3 Embedded systems
- I.4 Multi-agent systems
- I.5 Neurocontrol
- I.6 Other

J. Real World Applications of Neural Networks
- J.1 Games
- J.2 Finance
- J.3 Social systems
- J.4 Biomedical
- J.5 Power systems
- J.6 Telecommunication
- J.7 Defense
- J.8 Manufacturing
- J.9 Earth and Environmental Sciences
- J.10 Other

S. Special Sessions
- S01. From Desktop to Bedside - CI for Biopatterns
- S02. CI in Direct Support of Patient Care
- S03. CI in Medical Diagnosis
- S04. SC Tools for Bioinformatics
- S05. Biometrics
- S07. NN Models of the Human Mind: Thinking, Decision Making, and Social Interaction
- S08. Large-Scale Neural Systems: From Biology to Technology
- S10. Hippocampal Models, from Circuitry to Dynamics, from Dynamics to Cognitive Functions
- S11. Neural Modeling Fields: Foundations and Applications
- S12. Complex-valued Neural Networks
- S13. Power Systems
- S15. The Relevance of Time Domain to Neural Network Models
- S17. Adaptive Dynamic Programming for Feedback Control
- S18. Incremental Learning/Learning in Nonstationary Environments
- S19. Advances in Machine Learning

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Welcoming Message from the President of INNS

I am delighted to welcome all participants to the IJCNN 2009 – our premier conference on neural networks. This conference is jointly sponsored by INNS and the IEEE Computational Intelligence Society, with proceedings published by IEEE Press. Other societies have contributed significantly to the organization of IJCNN 2009, among them are: the European Neural Network Society (ENNS), the Japanese Neural Network Society (JNNS), the Asia-Pacific Neural Network Assembly (APNNA). I would like to acknowledge also our generous sponsors with whom we hope to retain scientific contacts in the future. I would like to express my sincere gratitude to the organizers lead by Robert Kozma and Ganesh Kumar Venayagamoorthy.

The IJCNN 2009 conference is a manifestation of the INNS policy as a truly *international, interdisciplinary* and *inclusive* society. This is demonstrated in the exciting IJCNN 2009 program that covers areas of brain science, neuroscience, brain information processing, cognitive science, brain-like computing, neuroinformatics and bioinformatics, neural network models and systems, applications in science, engineering, business and other areas. New research topics have recently emerged, such as neuro-genetic modeling, autonomous mental development, quantum and field information processing. These topics will also be presented in the special issue of the premier journal *Neural Networks,* published jointly by INNS, ENNS, and JNNS through *Elsevier Science.* An issue of our tri-society Newsletter has also been published and distributed to the IJCNN 2009 participants.

The INNS policy is that every participant at the IJCNN 2009 becomes a member of INNS for one year and therefore is benefiting of the INNS membership, such as a subscription to *Neural Networks* and the Newsletter, reduced fees for participation at conferences technically co-sponsored by INNS, sharing INNS resources and receiving INNS support for building SIGs and Regional Chapters (RC). I believe that the IJCNN 2009 forum will enhance the SIGs and the RCs formation and interaction. The new SIG on "Autonomous Mental Development," organised and chaired by Asim Roy, has already attracted more than 40 members. Its first meeting will be held on June 15 in Atlanta.

At this conference we are proud to present prestigious INNS 2009 awards to: Bernard Widrow – the INNS Hebb Award; Michael Arbib – the INNS Helmholtz Award; Frank Lewis – the INNS Gabor Award; and Colin Molter – the INNS Young Investigator Award.

Our goals to understand the information processes in the brain and to create more powerful brain-like machines for solving complex problems of the 21st century are very challenging indeed, but I am sure that with our joint efforts we will make a significant progress in the years to come.

Nikola Kasabov, President of INNS

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Welcome from the IEEE Computational Intelligence Society President

Every year we have the opportunity to come together at the International Joint Conference on Neural Networks (IJCNN) and share our latest findings as well as to continue long-standing friendships and develop new ones. One of the long-standing friendships involves the IEEE Computational Intelligence Society and the International Neural Network Society, the joint sponsors of this annual meeting. Together, and with the assistance of other international societies, we have maintained IJCNN as the premier large conference in the area of neural networks.

Much has changed since the IEEE first sponsored the progenitor of this meeting in 1987 in San Diego. The IEEE's involvement has grown along with the growth of what was then the IEEE Neural Networks Council, and subsequently the IEEE Neural Networks Society, and now the IEEE Computational Intelligence Society. During these years, friendships have come and gone and come again, but importantly today, our society is working closely with the International Neural Network Society, partnering to ensure that IJCNN remains a top-notch venue for the dissemination of new results in artificial and real neural research, computational or otherwise.

The IEEE Computational Intelligence Society is always looking for new ways to support our community. A significant new effort was just launched, the *IEEE Transactions on Autonomous Mental Development.* This new journal is sponsored by our society, with significant support from three other IEEE societies, Consumer Electronics, Computer, and Robotics and Automation. I encourage you to take a look at this new publication and help contribute to its success. I also encourage you to examine the new *IEEE Transactions on Computational Intelligence and AI in Games,* which we have also launched this year with numerous other IEEE supporting organizations. Each of these new journals will be important outlets for publications in diverse areas of neural networks research.

In even years, the IEEE Computational Intelligence Society takes the leading role in IJCNN, holding it as part of our IEEE World Congress on Computational Intelligence. This time, it's an odd year, and so the International Neural Network Society has the lead. It's our pleasure to follow along side. And it will be my pleasure to see you at IJCNN in Atlanta!

Sincerely,
David Fogel, President
IEEE Computational Intelligence Society

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Conference Information

Registration

Registration for the conference will be open at the following times in the Peachtree Ballroom Foyer (8th floor) at the Westin Peachtree Plaza:

Sunday, June 14 . . . . 7:00 a.m.-5:00 p.m.
Monday, June 15 . . . . 7:30 a.m.-5:00 p.m.
Tuesday, June 16 . . . . 7:30 a.m.-5:00 p.m.
Wednesday, June 17 . . . . 8:00 a.m.-5:00 p.m.
Thursday, June 18 . . . . 8:00 a.m.-2:00 p.m.

Internet Station

The Internet Station is located in Overlook on the 6th floor of the Westin Peachtree Plaza. The Internet Station will be open during the following hours:

Sunday, June 14 . . . . 1:00 p.m.-9:00 p.m.
Monday, June 15 . . . . 7:00 a.m.-9:00 p.m.
Tuesday, June 16 . . . . 7:00 a.m.-9:00 p.m.
Wednesday, June 17 . . . . 7:00 a.m.-9:00 p.m.
Thursday, June 18 . . . . 7:00 a.m.-5:00 p.m.

Speaker Ready Room

The Speaker Ready Room is located in the Atlanta Ballroom A on the 6th floor of the hotel. Please stop by prior to your presentation to preview your slides and review your presentation. The Speaker Ready Room will be open at the following times:

Sunday, June 14 . . . . 1:00 p.m.-5:00 p.m.
Monday, June 15 . . . . 7:00 a.m.-5:00 p.m.
Tuesday, June 16 . . . . 7:00 a.m.-5:00 p.m.
Wednesday, June 17 . . . . 7:00 a.m.-5:00 p.m.
Thursday, June 18 . . . . 7:00 a.m.-12:00 noon

Conference Badges

Please wear your badge to all IJCNN 2009 functions. It will admit you to the sessions and the exhibit area.

Plenary Poster Sessions

If you are presenting a poster at the IJCNN meeting, please review the schedule carefully and be sure to assemble and tear down your poster when indicated:

General Poster Session

Monday, June 15 – South Hall, Atlanta Merchandise Mart (located past the Overlook on the 6th floor)

Setup Posters: 1:00 p.m.-3:15 p.m.

Look for the poster number in the upper corner of the poster board. It will match the poster number from the program book.

Poster Viewing: 3:15 p.m.-6:15 p.m.

Posters presentations available for attendees to visit.

Poster Authors Present: 6:30 p.m.-8:00 p.m.

Presenters available at their poster for presentation and discussion with attendees.

Tuesday, June 16 – South Hall, Atlanta Merchandise Mart

Poster Viewing: 8:00 a.m.-2:00 p.m.

Remove Posters: 2:00 p.m.-3:30 p.m.

Special and General Poster Session

Tuesday, June 16 – South Hall, Atlanta Merchandise Mart

Setup Posters: 4:00 p.m.-6:15 p.m.

Look for the poster number in the upper corner of the poster board. It will match the poster number from the program book.

Poster Authors Present: 6:30 p.m.-8:00 p.m.

Presenters available at their poster for presentation and discussion with attendees.

Wednesday, June 17 – South Hall, Atlanta Merchandise Mart

Poster Viewing: 8:00 a.m.-5:00 p.m.

Remove Posters: 5:00 p.m.-6:00 p.m.

Exhibits

Plan to spend time in the South Hall at the Atlanta Merchandise Mart (on the 6th floor past the Overlook), visiting with exhibiting companies at the IJCNN 2009. Refreshment breaks and poster sessions will be located in the exhibit area. The exposition will be open at the following times:

Monday, June 15, 2009. . . . . . . 2:40 p.m.-8:00 p.m.
Tuesday, June 16, 2009 . . . . . . 9:30 a.m.-8:00 p.m.
Wednesday, June 17, 2009. . . 10:00 a.m.-3:10 p.m.

Exhibitors

Applied Computational Intelligence Laboratory

FedEx Institute of Technology
University of Memphis

Florida Institute of Technology

Georgia Institute of Technology

IEEE Computational Intelligence Society

Information Processing Laboratory
Florida Institute of Technology

International Neural Network Society (INNS)

Northrop Grumman

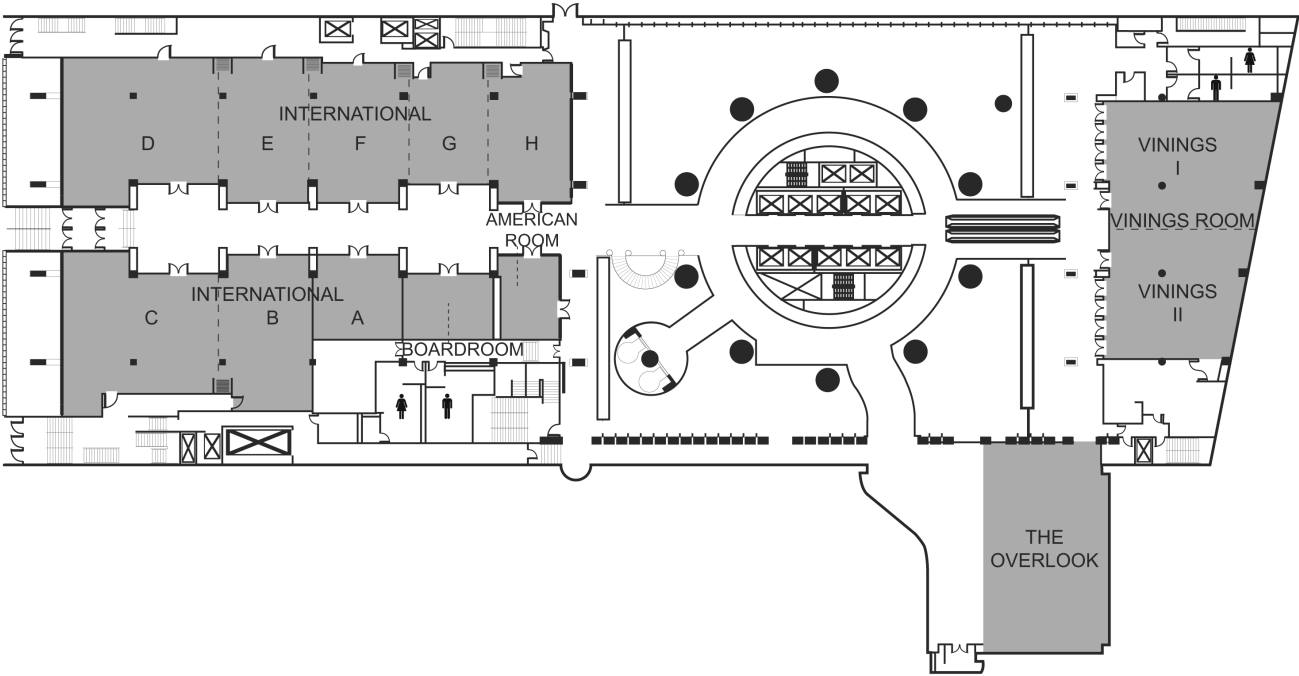**Real-Time Power & Intelligent**
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Springer

The Westin Peachtree Plaza • Conference Meeting Rooms

Sixth Floor

INTERNATIONAL

D E F G H

AMERICAN ROOM

INTERNATIONAL

C B A

BOARDROOM

VININGS I

VININGS ROOM

VININGS II

THE OVERLOOK

Seventh Floor

E F G H

ATLANTA BALLROOM

D C B A

GROUP OFFICE

AUGUSTA ROOM

AUGUSTA I

AUGUSTA II

AUGUSTA III
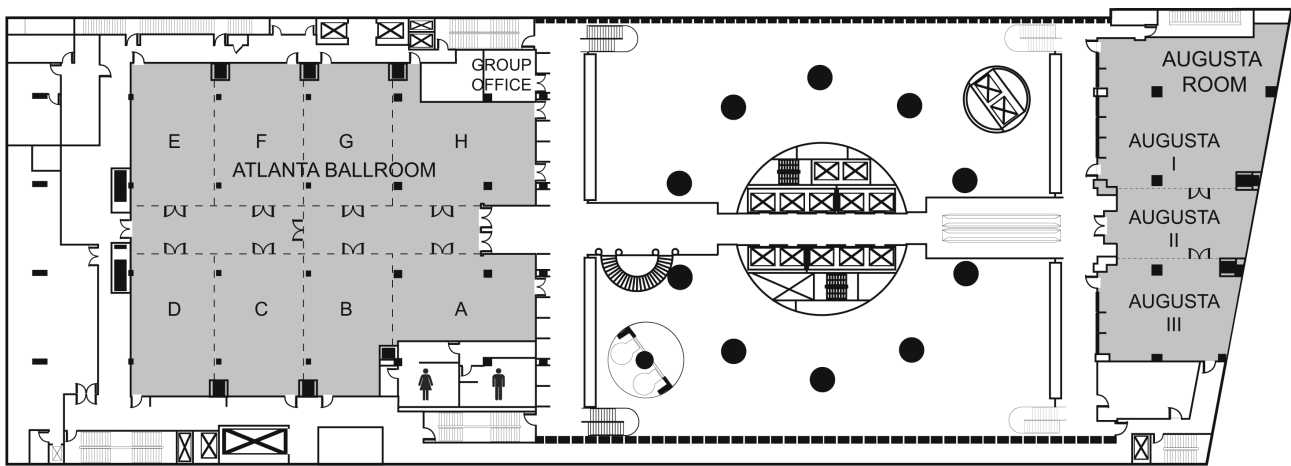
The Westin Peachtree Plaza • Conference Meeting Rooms

Eighth Floor

D E F

PEACHTREE BALLROOM
(MAIN FLOOR)

C B A

ROSWELL ROOM

ROSWELL I

ROSWELL II

14th Floor

TOWER ROOM
1401

TOWER ROOM
1402

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PANTRY
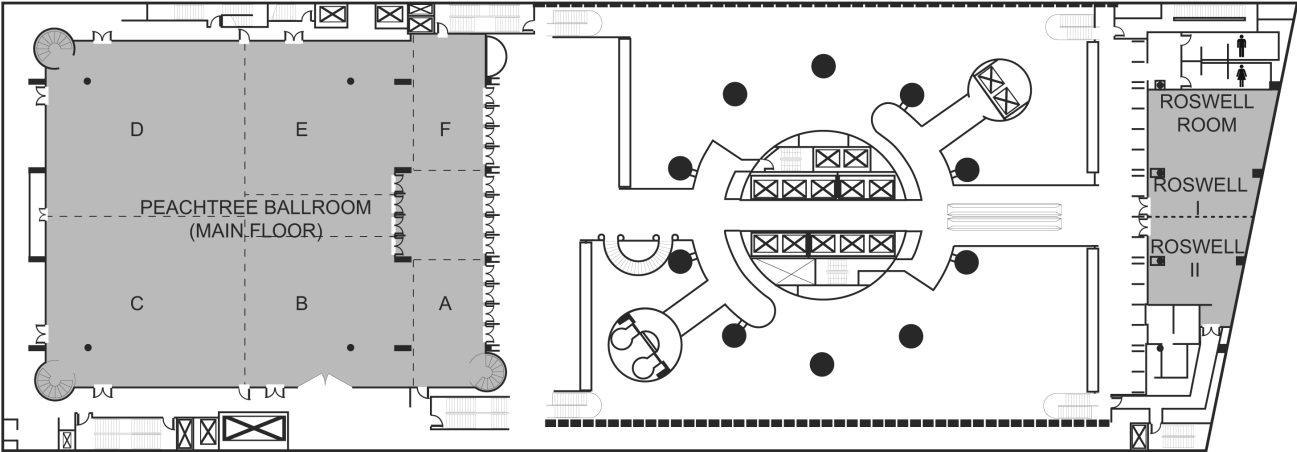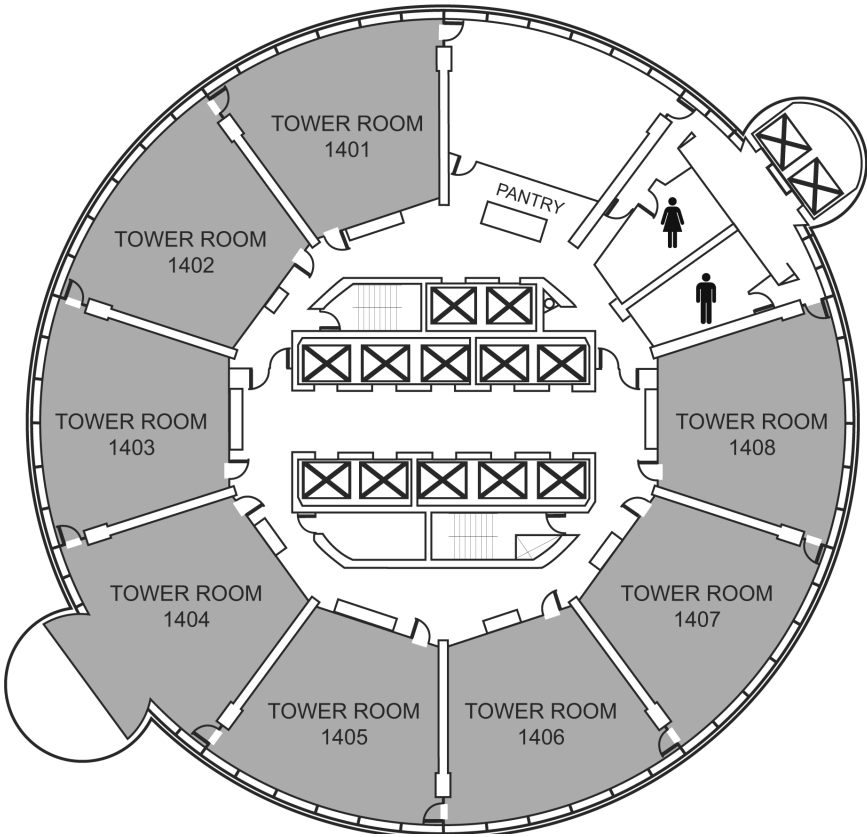
IJCNN 2009 Schedule-At-A-Glance

Sunday, June 14, 2009

7:00 a.m.-5:00 p.m.	Registration	Peachtree Ballroom Foyer (8th Floor)
8:00 a.m.-10:00 a.m.	Tutorial #1: Self-Organized Criticality: Avalanches in Neural Networks, Active Learning, and Intelligent Control	Peachtree Ballroom B (8th Floor)
8:00 a.m.-10:00 a.m.	Tutorial #2: Basics of DHP Type Adaptive Critics/Approximate Dynamic Programming and Some Application Issues	Peachtree Ballroom C (8th Floor)
8:00 a.m.-10:00 a.m.	Tutorial #3: The CLARION Cognitive Architecture	Peachtree Ballroom D (8th Floor)
8:00 a.m.-10:00 a.m.	Tutorial #4: To Spike or not to Spike: Methods, Tools and Applications of Spiking Neural Networks	Peachtree Ballroom E (8th Floor)
10:00 a.m.-10:30 a.m	Refreshment Break	Peachtree Ballroom Foyer (8th Floor)
10:30 a.m.-12:30 p.m.	Tutorial #5: Plasticity Revisited: Motivating New Algorithms Based on Recent Neuroscience Research	Peachtree Ballroom B (8th Floor)
10:30 a.m.-12:30 p.m.	Tutorial #6: Applications of Adaptive Critic Designs	Peachtree Ballroom C (8th Floor)
10:30 a.m.-12:30 p.m.	Tutorial #7: Cognitive Memory: Human and Machine	Peachtree Ballroom D (8th Floor)
10:30 a.m.-12:30 p.m.	Tutorial #8: Self-organizing Incremental Neural Network and its Application	Peachtree Ballroom E (8th Floor)
11:00 a.m.-6:00 p.m.	Board of Governors Meeting	Atlanta Ballroom C (7th Floor)
12:30 p.m.-1:30 p.m.	Lunch Break (on your own)	
1:00 p.m.-5:00 p.m.	Speaker Ready Room	Atlanta Ballroom A (7th Floor)
1:00 p.m.-9:00 p.m.	Internet Station	Overlook (6th Floor)
1:30 p.m.-3:30 p.m.	Tutorial #9: Hippocampal Dynamics and Related Cognitive Functions: From Neurophysiological Observations to Computational Models	Peachtree Ballroom B (8th Floor)
1:30 p.m.-3:30 p.m.	Tutorial #10: Autonomous Machine Learning	Peachtree Ballroom C (8th Floor)
1:30 p.m.-3:30 p.m.	Tutorial #11: Fundamentals of Categorical Neural Semantic Theory	Peachtree Ballroom D (8th Floor)
1:30 p.m.-3:30 p.m.	Tutorial #12: Introduction to Bioinformatics Data Sets Mining Using Fuzzy Biclustering	Peachtree Ballroom E (8th Floor)
3:30 p.m.-4:00 p.m.	Refreshment Break	Peachtree Ballroom Foyer (8th Floor)
4:00 p.m.-6:00 p.m.	Tutorial #13: Computational Approach to the Functioning of the Hippocampus: From Natural to Artificial Information Processing	Peachtree Ballroom B (8th Floor)
4:00 p.m.-6:00 p.m.	Tutorial #14: The Effective Use of the Time Domain in Neural Network Models	Peachtree Ballroom C (8th Floor)
4:00 p.m.-6:00 p.m.	Tutorial #15: Complex-valued Neural Networks	Peachtree Ballroom D (8th Floor)
4:00 p.m.-6:00 p.m.	Tutorial #16: Ensemble-based Systems in Computational Intelligence: Data Fusion, Missing Features, Incremental and Nonstationary Learning	Peachtree Ballroom E (8th Floor)
6:30 p.m.-8:00 p.m.	Opening Reception	Atlanta Ballroom F

Monday, June 15, 2009

Time	Event	Location
7:00 a.m.-9:00 a.m.	Internet Station	Overlook (6th Floor)
7:00 a.m.-5:00 p.m.	Speaker Ready Room	Atlanta Ballroom A (7th Floor)
7:30 a.m.-5:00 p.m.	Registration	Peachtree Ballroom Foyer (8th Floor)
8:00 a.m.-9:00 a.m.	Plenary Talk P1: Large-scale Neural Systems for Vision and Cognition, *Gail Carpenter*	Peachtree Ballroom (8th Floor)
9:00 a.m.-9:30 a.m.	Refreshment Break	Overlook (6th Floor)
9:30 a.m.-11:30 a.m.	Large-Scale Neural Systems: From Biology to Technology	Peachtree Ballroom B (8th Floor)
9:30 a.m.-11:30 a.m.	Neural Dynamics and Chaos	Peachtree Ballroom C (8th Floor)
9:30 a.m.-11:30 a.m.	Unsupervised Learning 1	Peachtree Ballroom D (8th Floor)
9:30 a.m.-11:30 a.m.	Adaptive Dynamic Programming for Feedback Control	Peachtree Ballroom E (8th Floor)
11:40 a.m.-12:40 p.m.	Large-Scale Neural Systems: From Biology to Technology	Peachtree Ballroom B (8th Floor)
11:40 a.m.-12:40 p.m.	Reinforcement Learning	Peachtree Ballroom C (8th Floor)
11:40 a.m.-12:40 p.m.	Brain Machine Interfaces	Peachtree Ballroom D (8th Floor)
11:40 a.m.-12:40 p.m.	Panel Session 1: Government Interests in Neural Network Research	Peachtree Ballroom E (8th Floor)
12:40 p.m.-1:40 p.m.	Lunch Break (on your own)	
1:40 p.m.-2:40 p.m.	Plenary Talk P2: Neural Synchrony and Selective Attention, *Robert Desimone*	Peachtree Ballroom (8th Floor)
2:40 p.m.-8:00 p.m.	Exhibits Open	South Hall, Atlanta Merchandise Mart (6th Floor)
2:40 p.m.-3:10 p.m.	Refreshment Break	South Hall, Atlanta Merchandise Mart (6th Floor)
3:10 p.m.-5:10 p.m.	Power Systems	Peachtree Ballroom B (8th Floor)
3:10 p.m.-5:10 p.m.	Image Processing	Peachtree Ballroom C (8th Floor)
3:10 p.m.-5:10 p.m.	Computational Neuroscience	Peachtree Ballroom D (8th Floor)
3:10 p.m.-5:10 p.m.	Advances in Machine Learning	Peachtree Ballroom E (8th Floor)
5:20 p.m.-6:20 p.m.	Vision	Peachtree Ballroom B (8th Floor)
5:20 p.m.-6:20 p.m.	Neuromorphic Engineering	Peachtree Ballroom C (8th Floor)
5:20 p.m.-6:20 p.m.	Biomedical Applications	Peachtree Ballroom D (8th Floor)
5:20 p.m.-6:20 p.m.	Finance	Peachtree Ballroom E (8th Floor)
6:30 p.m.-8:00 p.m.	General Poster Session	South Hall, Atlanta Merchandise Mart (6th Floor)

Tuesday, June 16, 2009

7:00 a.m.-9:00 p.m.	Internet Station	Overlook (6th Floor)
7:00 a.m.-5:00 p.m.	Speaker Ready Room	Atlanta Ballroom A (7th Floor)
7:30 a.m.-5:00 p.m.	Registration	Peachtree Ballroom Foyer (8th Floor)
8:00 a.m.-9:30 a.m.	Plenary Talk P3: Memristor: 38 Years Later, *Leon Chua*	Peachtree Ballroom (8th Floor)
9:30 a.m.-8:00 p.m.	Exhibits Open	South Hall, Atlanta Merchandise Mart (6th Floor)
9:30 a.m.-10:00 a.m.	Refreshment Break	South Hall, Atlanta Merchandise Mart (6th Floor)
10:00 a.m.-11:40 a.m.	From Desktop to Bedside – CI for Biopatterns	Peachtree Ballroom B (8th Floor)
10:00 a.m.-11:40 a.m.	Neural Hardware	Peachtree Ballroom C (8th Floor)
10:00 a.m.-11:40 a.m.	Supervised Learning	Peachtree Ballroom D (8th Floor)
10:00 a.m.-11:40 a.m.	Hippocampal Models, from Circuitry to Dynamics, from Dynamics to Cognitive Functions	Peachtree Ballroom E (8th Floor)
11:50 a.m.-12:50 p.m.	Sensors and Sensor Networks	Peachtree Ballroom B (8th Floor)
11:50 a.m.-12:50 p.m.	Support Vector Machines	Peachtree Ballroom C (8th Floor)
11:50 a.m.-12:50 p.m.	Neurocontrol	Peachtree Ballroom D (8th Floor)
11:50 a.m.-12:50 p.m.	CI in Medical Diagnosis	Peachtree Ballroom E (8th Floor)
12:50 p.m.-1:50 p.m.	Lunch Break (on your own)	
1:50 p.m.-2:50 p.m.	Plenary Talk P4: Large Scale Model of the Human Brain, *Eugene Izhikevich*	Peachtree Ballroom (8th Floor)
2:50 p.m.-3:20 p.m.	Refreshment Break	South Hall, Atlanta Merchandise Mart (6th Floor)
3:20 p.m.-5:20 p.m.	NN Models of the Human Mind: Thinking, Decision Making, and Social Interaction	Peachtree Ballroom B (8th Floor)
3:20 p.m.-5:20 p.m.	Brain Based Models 1	Peachtree Ballroom C (8th Floor)
3:20 p.m.-5:20 p.m.	Kernel Methods	Peachtree Ballroom D (8th Floor)
3:20 p.m.-5:20 p.m.	CI in Direct Support of Patient Care	Peachtree Ballroom E (8th Floor)
5:30 p.m.-6:30 p.m.	Panel Session: Neural Network Models for the Human Mind: Thinking, Decision Making, and Social Interaction	Peachtree Ballroom B (8th Floor)
5:30 p.m.-6:30 p.m.	Brain Based Models 2	Peachtree Ballroom C (8th Floor)
5:30 p.m.-6:30 p.m.	Machine Vision	Peachtree Ballroom D (8th Floor)

Tuesday, June 16, 2009 - continued

5:30 p.m.-6:30 p.m.	CI in Medical Diagnosis	Peachtree Ballroom E (8th Floor)
6:30 p.m.-8:00 p.m.	Special and General Poster Session	South Hall, Atlanta Merchandise Mart (6th Floor)

Wednesday, June 17, 2009

7:00 a.m.-9:00 a.m.	Internet Station	Overlook (6th Floor)
7:00 a.m.-5:00 p.m.	Speaker Ready Room	Atlanta Ballroom A (7th Floor)
8:00 a.m.-5:00 p.m.	Registration	Peachtree Ballroom Foyer (8th Floor)
8:00 a.m.-9:00 a.m.	Plenary Talk P5: Brain-like Intelligence Inside – Towards Autonomously Interacting Systems, *Edgar Koerner*	Peachtree Ballroom (8th Floor)
9:00 a.m.-10:00 a.m.	Plenary Talk P6: Spike Timing, Rhythms, and The Effective Use of Neural Hardware, *John Hopfield*	Peachtree Ballroom (8th Floor)
10:00 a.m.-3:10 p.m.	Exhibits Open	South Hall, Atlanta Merchandise Mart (6th Floor)
10:00 a.m.-10:30 a.m.	Refreshment Break	South Hall, Atlanta Merchandise Mart (6th Floor)
10:30 a.m.-12:30 p.m.	Neural Modeling Fields: Foundations and Applications	Peachtree Ballroom B (8th Floor)
10:30 a.m.-12:30 p.m.	Unsupervised Learning 2	Peachtree Ballroom C (8th Floor)
10:30 a.m.-12:30 p.m.	Panel Session: Celebrating the 50th Anniversary of the Invention of the LMS Algorithm	Peachtree Ballroom D (8th Floor)
10:30 a.m.-12:30 p.m.	Incremental Learning/Learning in Nonstationary Environments	Peachtree Ballroom E (8th Floor)
12:30 p.m.-1:40 p.m.	Lunch break (on your own)	
1:40 p.m.-2:40 p.m.	Plenary Talk P7: Cognitive Memory: Human and Machine, *Bernard Widrow*	Peachtree Ballroom (8th Floor)
2:40 p.m.-3:10 p.m.	Refreshment Break	South Hall, Atlanta Merchandise Mart (6th Floor)
3:10 p.m.-5:10 p.m.	Complex-valued Neural Networks	Peachtree Ballroom B (8th Floor)
3:10 p.m.-5:10 p.m.	Learning Methods and Applications	Peachtree Ballroom C (8th Floor)
3:10 p.m.-5:10 p.m.	Power Systems	Peachtree Ballroom D (8th Floor)
3:10 p.m.-5:10 p.m.	The Relevance of the Time Domain to Neural Network Models	Peachtree Ballroom E (8th Floor)
5:20 p.m.-6:20 p.m.	Time Series Analysis	Peachtree Ballroom B (8th Floor)
5:20 p.m.-6:20 p.m.	Robotics	Peachtree Ballroom C (8th Floor)
5:20 p.m.-6:20 p.m.	Nonlinear Functions	Peachtree Ballroom D (8th Floor)

Wednesday, June 17, 2009 - continued

5:20 p.m.-6:20 p.m.	Biometrics	Peachtree Ballroom E (8th Floor)
6:30 p.m.-8:00 p.m.	Pre-Banquet Reception	Peachtree Ballroom Foyer (8th Floor)
8:00 p.m.	IJCNN 2009 Banquet	Peachtree Ballroom (8th Floor)

Thursday, June 18, 2009

7:00 a.m.-5:00 p.m.	Internet Station	Overlook (6th Floor)
7:00 a.m.-12:00 noon	Speaker Ready Room	Atlanta Ballroom A (7th Floor)
8:00 a.m.-2:00 p.m.	Registration	Peachtree Ballroom Foyer (8th Floor)
8:00 a.m.-9:00 a.m.	Plenary Talk P8: Can Consciousness Ever be Modelled? *John Taylor*	Peachtree Ballroom (8th Floor)
9:00 a.m.-9:30 a.m.	Refreshment Break	Peachtree Ballroom Foyer (8th Floor)
9:30 a.m.-11:30 a.m.	SC Tools for Bioinformatics	Peachtree Ballroom B (8th Floor)
9:30 a.m.-11:30 a.m.	Hybrid Algorithms	Peachtree Ballroom C (8th Floor)
9:30 a.m.-11:30 a.m.	Spiking Neural Networks	Peachtree Ballroom D (8th Floor)
9:30 a.m.-11:30 a.m.	Cognitive Mechanisms and Modeling 1	Peachtree Ballroom E (8th Floor)
11:40 a.m.-12:40 p.m.	Attractor Networks	Peachtree Ballroom B (8th Floor)
11:40 a.m.-12:40 p.m.	Bioinformatics	Peachtree Ballroom C (8th Floor)
11:40 a.m.-12:40 p.m.	Earth and Environmental Sciences	Peachtree Ballroom D (8th Floor)
11:40 a.m.-12:40 p.m.	Cognitive Mechanisms and Modeling 2	Peachtree Ballroom E (8th Floor)
2:00 p.m.-5:00 p.m.	Workshop: Metrics for Human-Level AI	Atlanta Ballroom B (7th Floor)
2:00 p.m.-5:00 p.m.	Workshop: Autonomous Machine Learning	Atlanta Ballroom C (7th Floor)
2:00 p.m.-5:00 p.m.	Workshop: Computational Intelligence Approaches for the Analysis of Bioinformatics Data 1	Atlanta Ballroom D (7th Floor)
2:00 p.m.-5:00 p.m.	Workshop: Advances in Neurodynamic Systems 1	Atlanta Ballroom G (7th Floor)
3:15 p.m.-3:45 p.m.	Refreshment Break	Atlanta Ballroom Foyer

Friday, June 19, 2009

9:00 a.m.-12:00 noon	Workshop: Computational Intelligence Approaches for the Analysis of Bioinformatics Data 1 and 2	Atlanta Ballroom C (7th Floor)
9:00 a.m.-12:00 noon	Workshop: Advances in Neurodynamic Systems 1 and 2	Atlanta Ballroom D (7th Floor)
10:15 a.m.-10:45 a.m.	Refreshment Break	Atlanta Ballroom Foyer
1:00 p.m.-4:00 p.m.	Workshop: Advances in Neurodynamic Systems 3	Atlanta Ballroom D (7th Floor)

CALL FOR PAPERS

The 2010 IEEE World Congress on Computational Intelligence (IEEE WCCI 2010) is the largest technical event in the field of computational intelligence. It will host three conferences: the 2010 International Joint Conference on Neural Networks (IJCNN 2010), the 2010 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2010), and the 2010 IEEE Congress on Evolutionary Computation (IEEE CEC 2010). IEEE WCCI 2010 will be held in Barcelona, a Mediterranean city located in a privileged position on the northeastern coast of Spain. Barcelona combines history, art, architecture, and charm within a pleasant, and efficient urban environment where meet old friends, and make new ones. The congress will provide a stimulating forum for scientists, engineers, educators, and students from all over the world to discuss and present their research findings on computational intelligence.

Call for Contributed Papers

Prospective authors are invited to contribute high-quality papers to IEEE WCCI 2010. All papers should be submitted electronically through the Congress website http://www.wcci2010.org/call-for-papers. Contributed papers will be refereed by experts in the fields based on the criteria of originality, significance, quality and clarity. For general inquiries, please contact General Chair Pilar Sobrevilla at pilar.sobrevilla@upc.edu. For program inquiries, contact Conference Chairs: Alberto Prieto (IJCNN) at aprieto@ugr.es; Piero Bonissone (FUZZ-IEEE) at bonissone@research.ge.com; or Gary Fogel (IEEE CEC) at gfogel@natural-selection.com.

Call for Special Sessions

IEEE WCCI 2010 Program Committees solicit proposals for special sessions within the technical scopes of the three conferences. Special sessions, to be organized by international recognized experts, aim to bring together researchers in special focused topics. Cross-fertilization of the three technical disciplines and newly emerging research areas is strongly encouraged. Papers submitted for special sessions are to be peer-reviewed with the same criteria used for the contributed papers. Researchers interested in organizing special sessions are invited to submit formal proposal to the Special Session Chair Thomas Runkler at thomas.runkler@siemens.com or to the special session co-chairs. Proposals should include the session title, a brief description of the scope and motivation, biographic and contact information of the organizers.

Call for Tutorials and Workshops

IEEE WCCI 2010 will also feature pre-congress tutorials and workshops, covering fundamental and advanced computational intelligence topics. A tutorial or workshop proposal should include title, outline, expected enrollment, and presenter/organizer biography. Inquires regarding the tutorials and workshops should be addressed to Tutorials and Workshops Chairs. Their names and e-mail addresses will be listed later on the congress web site: www.wcci2010.org.

Call for Competitions

IEEE WCCI 2010 will host competitions to stimulate research in computational intelligence, promote fair evaluations, and attract students. The proposals should include descriptions of the problems addressed, motivations and expected impact on computational intelligence, data description, evaluation procedures and established baselines, schedules, anticipated number of participants, and a biography of the main team members. We invite you to submit proposals to the respective Competitions Chairs: Isabelle Guyon at isabelle@clopinet.com or Xiao Hu at hux@research.ge.com (IJCNN); Paul Gader at pgader@cise.ufl.edu or Hao Ying at hao.ying@wayne.edu (FUZZ-IEEE); Dan Ashlock at dashlock@uoguelph.ca, Phil Hingston at p.hingston@ecu.edu.au or Simon Lucas at sml@essex.ac.uk (IEEE CEC).

Website: http://www.wcci2010.org; E-mail:contact@wcci2010.org

Important Dates

Competition proposals	November 15, 2009
Special Sessions proposals	December 13, 2009
Notification of Special Session acceptance	December 22, 2009
Paper submission	January 31, 2010
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Early registration	May 23, 2010

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Hao Ying & Paul Gader, USA (FUZZ-IEEE)
Dan Ashlock, Canada; Phil Hingston, Australia & Simon Lucas, UK (IEEE CEC)

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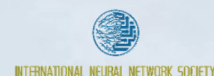Slawo Wesolkowski, Canada

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WCCI 2010

2010 IEEE WORLD CONGRESS ON COMPUTATIONAL INTELLIGENCE
JULY 18-23, 2010, BARCELONA, SPAIN
Barcelona International Convention Centre (CCIB)

2010 IEEE Congress on Evolutionary Computation

CALL FOR PAPERS

The annual IEEE Congress on Evolutionary Computation (IEEE CEC) will be held jointly with the International Joint Conference on Neural Networks (IJCNN) and the IEEE Conference on Fuzzy Systems (FUZZ-IEEE) as part of the 2010 IEEE World Congress on Computational Intelligence. Cross-fertilization of the three technical disciplines and newly emerging technologies is strongly encouraged.

Call for Contributed Papers

The annual IEEE CEC is one of the leading events in the field of evolutionary computation. It covers all topics in evolutionary computation including,

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

IEEE CEC 2010 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 lectures, special sessions, tutorials and workshops, panel discussions as well as poster presentations. In addition, participants will be treated to a series of social functions, receptions, and networking to establish new connections and foster everlasting friendship among fellow counterparts.

Prospective authors are invited to contribute high-quality papers to IEEE CEC 2010. All papers are to be submitted electronically through the IEEE WCCI 2010 website. For general inquiries about IEEE CEC 2010, please contact Conference Chair Gary Fogel at gfogel@natural-selection.com. For Program inquiries please contact Hisao Ishibuchi at hisaoi@cs.osakafu-u.ac.jp. For general inquires about WCCI 2010 please contact Pilar Sobrevilla at pilar.sobrevilla@upc.edu

Call for Special Sessions

The IEEE CEC 2010 Program Committee solicits proposals for special sessions within the technical scopes of the congress. Special sessions, to be organized by international recognized 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 organizing special sessions are invited to submit formal proposal to the Special Session Co-Chairs: Oscar Cordón at oscar.cordon@softcomputing.es or Ali Zalzala at zalzala@hikmagroup.com. Proposals should include the session title, a brief description of the scope and motivation, biographic and contact information of the organizers.

Call for Tutorials and Workshops

IEEE CEC 2010 will also feature pre-congress tutorials and workshops, covering fundamental and advanced evolutionary computation topics. A tutorial or workshop proposal should include title, outline, expected enrollment, and presenter/organizer biography. We invite you to submit proposals to the Tutorial and Workshop Co-chairs: Yaochu Jin at yaochu.jin@honda-ri.de or Clare Bates Congdon at congdon@usm.maine.edu.

Call for Competitions

IEEE CEC 2010 will host competitions to stimulate research in evolutionary computation, promote fair evaluations, and attract students. The proposals for new competitions should include descriptions of the problems addressed, motivations and expected impact on evolutionary computation, data description, evaluation procedures and established baselines, schedules, anticipated number of participants, and a biography of the main team members. We invite you to submit proposals to the Competitions Co-chairs: Dan Ashlock at dashlock@uoguelph.ca, Phil Hingston at p.hingston@ecu.edu.au, or Simon Lucas at sml@essex.ac.uk. Competitions will be made available via the WCCI conference website below.

Website: http://www.wcci2010.org; E-mail:contact@wcci2010.org

Important Dates

Competition proposals	November 15, 2009
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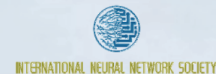**Competitions Co-Chairs**
Dan Ashlock, Canada
Phil Kingston, Australia
Simon Lucas, United Kingdom

IEEE Computational Intelligence Society

IEEE Celebrating 125 Years of Engineering the Future

INTERNATIONAL NEURAL NETWORK SOCIETY

2010 IEEE Conference on Fuzzy Systems

CALL FOR PAPERS

The annual IEEE International Conference on Fuzzy Systems (FUZZ-IEEE) will be held jointly with the International Joint Conference on Neural Networks (IJCNN) and the IEEE Congress on Evolutionary Computation (IEEE CEC) as part of the 2010 IEEE World Congress on Computational Intelligence. Cross-fertilization of the three technical disciplines and newly emerging technologies is strongly encouraged.

Call for Contributed Papers

The annual IEEE FUZZ-IEEE is one of the leading events in the field of fuzzy systems. It covers all topics in fuzzy systems including,

- Fuzzy logic and fuzzy set theory
- Lattice theory and multi-valued logics
- Approximate reasoning
- Type-2 fuzzy logic
- Rough sets and random sets
- Fuzzy mathematics
- Possibility theory and imprecise probability
- Fuzzy decision making and decision support systems
- Fuzzy optimization and design
- Fuzzy man-machine interfaces, emotional computing
- Fuzzy computing with words, granular computing
- Fuzzy systems for agent technology
- Hybrid fuzzy systems (fuzzy-neuro-evolutionary-rough)
- Fuzzy image and multimedia processing
- Medical, financial, industrial and other real-world applications

- Fuzzy document retrieval systems and text mining
- Fuzzy systems for natural language processing
- Fuzzy information processing
- Fuzzy and rough data analysis, fuzzy statistics
- Fuzzy data mining and forecasting
- Fuzzy systems modeling and identification
- Fuzzy control and intelligent systems
- Fuzzy systems for robotics
- Fuzzy pattern recognition
- Fuzzy clustering
- Fuzzy systems architectures and hardware
- Fuzzy web intelligence
- Fuzzy sets in bioinformatics
- Fuzzy databases, fuzzy data summarization
- Emerging areas

FUZZ-IEEE 2010 will feature a world-class conference that aims to bring together researchers and practitioners in the field of fuzzy systems and computational intelligence from all around the globe. Technical exchanges within the research community will encompass keynote lectures, special sessions, tutorials and workshops, panel discussions as well as poster presentations. In addition, participants will be treated to a series of social functions, receptions, and networking to establish new connections and foster everlasting friendship among fellow counterparts. Prospective authors are invited to contribute high-quality papers to FUZZ-IEEE 2010. All papers are to be submitted electronically through the IEEE WCCI 2010 website. For general inquiries about FUZZ-IEEE 2010, please contact Conference Chair Piero Bonissone at bonissone@crd.ge.com. For Program inquiries please contact Bernadette Bouchon-Meunier at Bernadette.Bouchon-Meunier@lip6.fr. For general inquires about WCCI 2010 please contact Pilar Sobrevilla at pilar.sobrevilla@upc.edu.

Call for Special Sessions

The FUZZ-IEEE 2010 Program Committee solicits proposals for special sessions within the technical scopes of the congress. Special sessions, to be organized by international recognized 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 organizing special sessions are invited to submit formal proposal to the Special Session Co-Chairs: Maria Rifqi at Maria.rifqi@lip6.fr or Mika Sato-Ilic at mika@risk.tsukuba.ac.jp. Proposals should include the session title, a brief description of the scope and motivation, biographic and contact information of the organizers.

Call for Tutorials and Workshops

FUZZ-IEEE 2010 will also feature pre-congress tutorials and workshops, covering fundamental and advanced fuzzy computation topics. A tutorial or workshop proposal should include title, outline, expected enrollment, and presenter/organizer biography. We invite you to submit proposals to the Tutorial and Workshop Co-chairs: Dimitar Filev at dfilev@ford.com or Keeley Crockett at K.Crockett@mmu.ac.uk.

Call for Competitions

FUZZ-IEEE 2010 will host competitions to stimulate research in fuzzy systems, promote fair evaluations, and attract students. The proposals for new competitions should include descriptions of the problems addressed, motivations and expected impact on fuzzy systems, data description, evaluation procedures and established baselines, schedules, anticipated number of participants, and a biography of the main team members. We invite you to submit proposals to the Competitions Co-Chairs: Hao Ying at hao.ying@wayne.edu and Paul Gader at pgader@cise.ufl.edu. Competitions will be made available via the WCCI conference website.

Website: http://www.wcci2010.org; E-mail:contact@wcci2010.org

Important Dates

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2010 IEEE WORLD CONGRESS ON COMPUTATIONAL INTELLIGENCE
JULY 18-23, 2010, BARCELONA, SPAIN
Barcelona International Convention Centre (CCIB)

2010 International Joint Conference on Neural Networks

CALL FOR PAPERS

The annual International Joint Conference on Neural Networks (IJCNN) will be held jointly with the IEEE Conference on Fuzzy Systems (FUZZ-IEEE) and the IEEE Congress on Evolutionary Computation (CEC) as part of the 2010 IEEE World Congress on Computational Intelligence. Cross-fertilization of the three technical disciplines and newly emerging technologies is strongly encouraged.

Call for Contributed Papers

The annual IJCNN is the premier international conference in the area of neural networks theory, analysis and applications. It is organized by the International Neural Networks Society (INNS) and sponsored jointly by INNS and the IEEE Computational Intelligence Society. This is an exemplary collaboration between the two leading societies on neural networks and it provides a solid foundation for the future extensive development of the field. Cover all topics in the field of artificial neural networks, including:

1. Mathematical and theoretical methods.
2. Neurocomputational formulations and models.
3. Learning and adaptation.
4. Connectionist methods in cognitive functions.
5. Hybrid systems.
6. Neuro-technologies and neuro-engineering.
7. Real world applications of neural networks.

(More details on the website)

IJCNN 2010 will feature a world-class conference that aims to bring together researchers and practitioners in the field of artificial neural networks and computational intelligence from all around the globe. Technical exchanges within the research community will encompass keynote lectures, special sessions, tutorials and workshops, panel discussions as well as poster presentations. In addition, participants will be treated to a series of social functions, receptions, and networking to establish new connections and foster everlasting friendship among fellow counterparts.

Prospective authors are invited to contribute high-quality papers to IJCNN 2010. All papers are to be submitted electronically through the IEEE WCCI 2010 website. For general inquiries about IJCNN, please contact Conference Chair, Alberto Prieto, at aprieto@ugr.es. For Program inquiries please contact Vicenzo Piuri at vincenzo.piuri@unimi.it. For general inquires about WCCI 2010 please contact Pilar Sobrevilla at pilar.sobrevilla@upc.edu

Call for Special Sessions

The IJCNN Program Committee solicits proposals for special sessions within the technical scopes of the congress. Special sessions, to be organized by international recognized 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 organizing special sessions are invited to submit formal proposal to the Special Session Co-Chairs: Francisco Sandoval at sandoval@dte.uma.es or Joan Cabestany at cabestan@eel.upc.edu. Proposals should include the session title, a brief description of the scope and motivation, biographic and contact information of the organizers.

Call for Tutorials and Workshops

IJCNN 2010 will also feature pre-congress tutorials and workshops, covering fundamental and advanced neural networks topics. A tutorial or workshop proposal should include title, outline, expected enrollment, and presenter/organizer biography. We invite you to submit proposals to the Tutorial and Workshop Co-chairs: Jennie Si at si@asu.edu and Amaury Lendasse at lendasse@hut.fi, respectively.

Call for Competitions

IJCNN 2010 will host competitions to stimulate research in neural networks, promote fair evaluations, and attract students. The proposals for new competitions should include descriptions of the problems addressed, motivations and expected impact on neural networks, data description, evaluation procedures and established baselines, schedules, anticipated number of participants, and a biography of the main team members. We invite you to submit proposals to the Competitions Co-Chairs: Isabelle Guyon at isabelle@clopinet.com or Xiao Hu at hux@research.ge.com. Competitions will be made available via the WCCI conference website below.

Website: http://www.wcci2010.org; E-mail:contact@wcci2010.org

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