



2019 International Joint Conference on Neural Networks

Call for Papers / Special Sessions / Tutorials / Competitions / Workshops

The 2019 International Joint Conference on Neural Networks (IJCNN) will be held in Budapest, Hungary on July 14-19, 2019. The conference is organized by the International Neural Network Society (INNS) in cooperation with the IEEE Computational Intelligence Society, and is the premier international meeting for researchers and other professionals in neural networks and related areas. It will feature invited plenary talks by world-renowned speakers in the areas of neural network theory and applications, computational neuroscience, robotics, and distributed intelligence. In addition to regular technical sessions with oral and poster presentations, the conference program will include special sessions, competitions, tutorials and workshops on topics of current interest.



Important Dates:

- Special Session proposals: Oct 15, 2018
- Paper Submissions: Dec 15, 2018
- Paper Acceptance Notifications: Jan 30, 2019

For more information, please visit <http://www.ijcnn.org/>.

2019 IEEE International Conference on Fuzzy Systems

Call for Papers / Special Sessions / Tutorials / Competitions / Workshops

The 2019 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2019), the world-leading event focusing on the theory and application of fuzzy logic, will be held in New Orleans, Louisiana, USA. FUZZ-IEEE 2019 will represent a unique meeting point for scientists and engineers, from academia and industry, to interact and discuss the latest enhancements and innovations in the field. The topics of the conference will cover all aspects of theory and applications of fuzzy logic and its hybridisations with other artificial and computational intelligence methods, see [here](#).



Important Dates:

- Special Session, Tutorials, Competitions proposals: Oct 18, 2018
- Paper Submissions: Jan 11, 2019
- Paper Acceptance Notifications: Mar 4, 2019

For more information, please visit <http://sites.ieee.org/fuzzieee-2019/>.

Important Message

★ Proposals to Organize CIS Conferences in 2020

Proposals for the organization of IEEE SSCI in 2020 must be submitted by **Oct 15**.

Proposals for all other CIS sponsored conferences in 2020 must be submitted by **Dec. 15**. Please inform [Bernadette Bouchon-Meunier](#) and [Piero Bonissone](#) of your intention to prepare a bid as soon as you decide to do so. Policies, procedures and budget worksheet for such proposals are [available](#).

★ CIS Chapter Activity Promotion Grants

IEEE CIS has strategic plans to promote member activities through chapters and set up an activity promotion grant. Proposal submission is now open till **Oct. 31**. ([Details](#))

CIS Conferences

★ Conference Calendar (2018-2019)

★ 2018 IEEE International Conference on Data Science and Advanced Analytics (DSAA 2018)

Turin, Italy
Oct. 1-4, 2018

2018)

Research Frontier

Learning Without External Reward

In the traditional reinforcement learning paradigm, a reward signal is applied to define the goal of the task. Usually, the reward signal is a "hand-crafted" numerical value or a pre-defined function: it tells the agent how good or bad a specific action is. However, we believe there exist situations in which the environment cannot directly provide such a reward signal to the agent. Therefore, the question is whether an agent can still learn without the external reward signal or not. To this end, this article develops a self-learning approach which enables the agent to adaptively develop an internal reward signal based on a given ultimate goal, without requiring an explicit external reward signal from the environment. In this article, we aim to convey the self-learning idea in a broad sense, which could be used in a wide range of existing reinforcement learning and adaptive dynamic programming algorithms and architectures. We describe the idealized forms of this method mathematically, and also demonstrate its effectiveness through a triple-link inverted pendulum case study.



IEEE Computational Intelligence Magazine, Aug. 2018

Continuous Dropout

We extend the traditional binary dropout to continuous dropout. On the one hand, continuous dropout is considerably closer to the activation characteristics of neurons in the human brain than traditional binary dropout. On the other hand, we demonstrate that continuous dropout has the property of avoiding the co-adaptation of feature detectors, which suggests that we can extract more independent feature detectors for model averaging in the test stage. We introduce the proposed continuous dropout to a feedforward neural network and comprehensively compare it with binary dropout, adaptive dropout, and DropConnect on Modified National Institute of Standards and Technology, Canadian Institute for Advanced Research-10, Street View House Numbers, NORB, and ImageNet large scale visual recognition competition-12. Thorough experiments demonstrate that our method performs better in preventing the co-adaptation of feature detectors and improves test performance.



IEEE Transactions on Neural Networks and Learning Systems, Sep. 2018

Dimensionality Reduction in Multiple Ordinal Regression

In addition to preserving the discriminant information for binary or multiple classes, some real-world applications also require keeping the preference degrees of assigning the data to multiple aspects. To address this issue, we propose a novel supervised dimensionality reduction (DR) method for DR in multiple ordinal regression (DRMOR), whose projected subspace preserves all the ordinal information in multiple aspects or labels. We formulate this problem as a joint optimization framework to simultaneously perform DR and ordinal regression. In contrast to most existing DR methods, which are conducted independently of the subsequent classification or ordinal regression, the proposed framework



Guangzhou, China

Oct. 8-12, 2018

★ 2018 IEEE Latin American Conference on Computational Intelligence (LA-CCI 2018)

Guadalajara, Mexico

Nov. 7-9, 2018

★ 2018 IEEE Symposium Series on Computational Intelligence (SSCI 2018)

Bangalore, India

Nov. 18-21, 2018

★ 2019 IEEE Congress on Evolutionary Computation (CEC 2019)

Wellington, New Zealand

Jun. 10-13, 2019

(SS Proposal: Oct. 26)

★ 2019 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2019)

New Orleans, USA

Jun. 23-26, 2019

(SS Proposal: Oct. 18)

★ 2019 International Joint Conference on Neural Networks (IJCNN 2019)

Budapest, Hungary

Jul. 14-19, 2019

(SS Proposal: Oct. 15)

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fully benefits from both of the procedures. We experimentally demonstrate that the proposed DRMOR method (DRMOR-M) well preserves the ordinal information from all the aspects or labels in the learned subspace. Moreover, DRMOR-M exhibits advantages compared with representative DR or ordinal regression algorithms on three standard data sets.

IEEE Transactions on Neural Networks and Learning Systems, Sep. 2018

Educational Activities

Education Multimedia Subcommittee

The CIS Education Multimedia subcommittee intend to build up a reference centre of links to good quality short interactive multimedia demonstrations or short videos on CI. These can be suitable for a range of audiences, and can link to externally hosted resources. We invite you to submit recommendations for resources you have come across that would introduce CIS topics to benefit the wider community.



IEEE.tv – plenary talks from Fuzz-IEEE 2017

Now available on IEEE.tv a plenary talk from Fuzz-IEEE17:

- **Title: Computational Intelligence for Brain Computer Interface**
Speaker: Chin-Teng Lin
National Chiao Tung University, Taiwan



Call for Papers (Journal)

- [IEEE CIM Special Issue on Deep Reinforcement Learning and Games \(Oct 1\)](#)
- [IEEE CIM Special Issue on CI for Internet of Things in the Big Data Era \(Dec 31\)](#)
- [IEEE TEVC Special Issue on Theoretical Foundations of Evolutionary Computation \(Nov 1\)](#)
- [IEEE TEVC Special Issue on Parallel Evolution for Large Scale Optimization \(Nov 1\)](#)
- [IEEE TFS Special Issue on Deep Fuzzy Models \(Dec 1\)](#)
- [IEEE TFS Special Issue on Fuzzy Systems for Medical Image Analysis \(Mar 1, 2019\)](#)
- [IEEE TFS Special Issue on Fuzzy Rough Sets for Big Data \(Apr 1, 2019\)](#)
- [IEEE TFS Special Issue on Toward Humanoid Robots: Fuzzy Sets and Extensions \(May 1, 2019\)](#)
- [IEEE TETCI Special Issue on Computational Intelligence for Cellular/Wireless Communications and Sensing \(Oct 1\)](#)
- [IEEE TETCI Special Issue on Big Data and Computational Intelligence for Agile Wireless IoT \(Oct 15\)](#)
- [IEEE TETCI Special Issue on Privacy and Security in Computational Intelligence \(Nov 30\)](#)

Call for Papers (Conference)



- IEEE Congress on Evolutionary Computation (CEC 2019) (Jan 7)
- IEEE CEC 2019 Special Session on Memetic Computing
- IEEE CEC 2019 Special Session on Data-Driven Evolutionary Optimization of Computationally Expensive Problems
- IEEE CEC 2019 Special Session on Evolutionary Computation for Automated Algorithm Design
- IEEE CEC 2019 Special Session on Games
- IEEE CEC 2019 Special Session on Evolutionary Computation for Music, Art, and Creativity
- IEEE CEC 2019 Special Session on Multimodal Multiobjective Optimization
- IEEE CEC 2019 Special Session on Brain Storm Optimization Algorithms
- IEEE CEC 2019 Special Session on Evolutionary Computation and Neural Network for Combating Cybercrime
- IEEE CEC 2019 Special Session on Evolutionary Computation in Healthcare and Biomedical Data
- IEEE CEC 2019 Special Session on Pigeon-Inspired Optimization
- IEEE CEC 2019 Special Session on Evolutionary Scheduling and Combinatorial Optimization
- IEEE CEC 2019 Special Session on Many-objective Optimization
- IEEE CEC 2019 Special Session on Evolutionary Computation in Healthcare Industry
- IEEE CEC 2019 Special Session on Evolutionary Computation for Service and Cloud Computing
- IEEE CEC 2019 Special Session on New Directions in Evolutionary Machine Learning
- IEEE CEC 2019 Special Session on When Evolutionary Computation Meets Data Mining
- IEEE CEC 2019 Special Session on Evolutionary Computation for Smart Grid and Sustainable Energy Systems
- IEEE CEC 2019 Special Session on Evolutionary Computation for Feature Selection, Extraction and Dimensionality Reduction
- IEEE CEC 2019 Special Session on Transfer Learning in Evolutionary Computation
- IEEE CEC 2019 Special Session on Nature-Inspired Constrained Optimization
- IEEE CEC 2019 Special Session on Theory of Bio-Inspired Computation
- IEEE CEC 2019 Special Session on Optimization, Learning, and Decision-Making in Bioinformatics and Bioengineering
- IEEE CEC 2019 Special Session on Evolutionary Computation in Internet of Everything
- IEEE CEC 2019 Special Session on Evolutionary Computation for Symbolic Modelling
- IEEE CEC 2019 Special Session on Hybrid Algorithms in Scheduling and Network Design
- IEEE CEC 2019 Special Session on Evolutionary Computation for Handling Missing Values in Data Mining
- IEEE CEC 2019 Special Session on Complex Networks and Evolutionary Computation
- IEEE CEC 2019 Special Session on Evolutionary Computation in Dynamic and Uncertain Environments
- IEEE CEC 2019 Special Session on Artificial Immune Systems
- IEEE CEC 2019 Special Session on Cooperative Evolutionary Computation
- IEEE CEC 2019 Special Session on Computational Intelligence in Finance and Economics

- [IEEE International Conference on Data Science and Advanced Analytics \(DSAA 2018\), Turin, Italy \(Oct 1-4\)](#)
- [Indigenous Language Technologies at the CoEDL Summer School, ANU Canberra, Australia \(Nov 26-30\)](#)

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