



2018 IEEE CIS Call for Nominations

The following positions within the IEEE Computational Intelligence Society (CIS) become vacant:

- President-Elect (2019)
- VP for Publications (2019-20)
- VP for Members Activities (2019-20)
- VP for Education (2019-2020)
- Five ADCOM Members-at-Large (2019-2021)



All the nominations and self-nominations should be sent to the Chair of the CIS Nominations Committee, Prof. Pablo A. Estevez (pestevez@cec.uchile.cl) in this case, and copy to Jo-Ellen Snyder (j.e.snyder@ieee.org) by **May 31, 2018 (Thursday)**. ([Details](#))

Pablo A. Estevez, Chair (2018) of CIS Nominations Committee

2018 Call for CIS Award Nominations

The IEEE Computational Intelligence Society (CIS) annually recognizes significant contributions and meritorious service in the field of computational intelligence. Please consider nominating well deserving colleagues for one of the following awards:

- Neural Networks Pioneer Award
- Fuzzy Systems Pioneer Award
- Evolutionary Computation Pioneer Award
- Meritorious Service Award
- IEEE Transactions on Neural Networks and Learning Systems Outstanding Paper Award
- IEEE Transactions on Evolutionary Computation Outstanding Paper Award
- IEEE Transactions on Cognitive and Developmental Systems Outstanding Paper Award
- IEEE Transactions on Computational Intelligence and AI in Games Outstanding Paper Award
- IEEE Computational Intelligence Magazine Outstanding Paper Award
- Outstanding Chapter Award
- Outstanding PhD Dissertation Award
- Outstanding Organization Award
- Outstanding Early Career Award



The completed nominations must be submitted by email to the Awards Soliciting Nominations Subcommittee Chair, Prof. Cesare Alippi (cesare.alippi@polimi.it) and a copy to cis-

Important Message

★ Proposals for IEEE CEC or FUZZ-IEEE in 2021

Proposals for the organization of IEEE CEC or FUZZ-IEEE in 2021 must be submitted as soon as possible, and no later than **May 31**. Policies, procedures and budget worksheet for such proposals are [available](#). More detailed guidelines must be requested to [Bernadette Bouchon-Meunier](#) before preparing the bid.

★ Call for 2018 Summer Schools Proposals

You are encouraged to submit a proposal to hold a CIS summer school in computational intelligence from May to December 2018. Deadline for submitting the proposal: **Apr 14**. ([Details](#))

CIS Conferences

★ Conference Calendar (2018-2019)

- ★ 2018 IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology (CIBCB 2018)
Missouri, USA
May 30-Jun. 2, 2018

Conference on
Computational Intelligence
and Virtual Environments

info@ieee.org by **Apr 30, 2018** in a single, standalone pdf file. The nominations deadline is strict. ([Details](#))

Marios Polycarpou, Chair of CIS Awards Committee

Research Frontier

Cluster-Based Content Distribution Integrating LTE and IEEE 802.11p with Fuzzy Logic and Q-Learning

In recent years, vehicular ad hoc networks (VANETs) have been attracting great interests for improving communications between vehicles using infrastructure-less wireless technologies. In this paper, we discuss integrating LTE (Long Term Evolution) with IEEE 802.11p for the content distribution in VANETs. We propose a two-level clustering approach where cluster head nodes in the first level try to reduce the MAC layer contentions for vehicle-to-vehicle (V2V) communications, and cluster head nodes in the second level are responsible for providing a gateway functionality between V2V and LTE. A fuzzy logic-based algorithm is employed in the first-level clustering, and a Q-learning algorithm is used in the second-level clustering to tune the number of gateway nodes. We conduct extensive simulations to evaluate the performance of the proposed protocol under various network conditions. Simulation results show that the proposed protocol can achieve 23% throughput improvement in high-density scenarios compared to the existing approaches.



IEEE Computational Intelligence Magazine, Feb. 2018

Broad Learning System: An Effective and Efficient Incremental Learning System Without the Need for Deep Architecture

Broad Learning System (BLS) that aims to offer an alternative way of learning in deep structure is proposed in this paper. Deep structure and learning suffer from a time-consuming training process because of a large number of connecting parameters in filters and layers. Moreover, it encounters a complete retraining process if the structure is not sufficient to model the system. The BLS is established in the form of a flat network, where the original inputs are transferred and placed as “mapped features” in feature nodes and the structure is expanded in wide sense in the “enhancement nodes.” The incremental learning algorithms are developed for fast remodeling in broad expansion without a retraining process if the network deems to be expanded. Two incremental learning algorithms are given for both the increment of the feature nodes (or filters in deep structure) and the increment of the enhancement nodes. The designed model and algorithms are very versatile for selecting a model rapidly. In addition, another incremental learning is developed for a system that has been modeled encounters a new incoming input. Specifically, the system can be remodeled in an incremental way without the entire retraining from the beginning.



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

Light Gated Recurrent Units for Speech Recognition

In this paper, we revise one of the most popular RNN models, namely, gated recurrent units (GRUs), and

for Measurement Systems and Applications (CIVEMSA 2018)
Ottawa, Canada
Jun. 12-14, 2018

★ 2018 IEEE World Congress on Computational Intelligence (WCCI 2018)
Rio de Janeiro, Brazil
Jul. 8-13, 2018

★ 2018 IEEE Conference on Computational Intelligence and Games (CIG 2018)
Maastricht, The Netherlands
Aug. 14-17, 2018

★ 2018 Joint IEEE International Conference on Developmental Learning and Epigenetic Robotics (ICDL-EpiRob 2018)
Tokyo, Japan
Sep. 17-20, 2018
(Submission: Apr. 1)

★ 2018 IEEE International Conference on Data Science and Advanced Analytics (DSAA 2018)
Turin, Italy
Oct. 1-4, 2018
(Submission: May 25)

★ 2018 IEEE Smart World Congress (SmartWorld 2018)
Guangzhou, China
Oct. 8-12, 2018
(Submission: Apr. 8)

★ 2018 IEEE Latin American Conference on Computational Intelligence (LA-CCI 2018)
Guadalajara, Mexico
Nov. 7-9, 2018
(Submission: Apr. 15)

Series on Computational Intelligence (SSCI 2018)

propose a simplified architecture that turned out to be very effective for automatic speech recognition (ASR). The contribution of this work is twofold: First, we analyze the role played by the reset gate, showing that a significant redundancy with the update gate occurs. As a result, we propose to remove the former from the GRU design, leading to a more efficient and compact single-gate model. Second, we propose to replace hyperbolic tangent with rectified linear unit activations. This variation couples well with batch normalization and could help the model learn long-term dependencies without numerical issues. Results show that the proposed architecture, called light GRU, not only reduces the per-epoch training time by more than 30% over a standard GRU, but also consistently improves the recognition accuracy across different tasks, input features, noisy conditions, as well as across different ASR paradigms, ranging from standard DNN-HMM speech recognizers to end-to-end connectionist temporal classification models.



IEEE Transactions on Emerging Topics in Computational Intelligence, Apr. 2018

Bangalore, India
Nov. 18-21, 2018
(Submission: Jun. 15)

★ 2019 IEEE Congress on
Evolutionary Computation
(CEC 2019)
Wellington, New Zealand
Jun. 10-13, 2019

Editor

Chuan-Kang Ting
National Tsing Hua University
Taiwan
Email: ckting@pme.nthu.edu.tw

Technical Activities

Bioinformatics and Bioengineering Technical Committee (BBTC)

The BBTC is gearing up for its annual Conference on Computational Intelligence in Bioinformatics and Computational Biology. CIBCB will be held this year in the USA in St. Louis, May 30 - Jun 2. St. Louis is a great location for us because it has a large biotech industry base. Dr. Donald Wunsch is the general chair, and the keynote speaker will be Dr. Gilad Gross. He will talk to us about medical data and about what doctors hope for from CI researchers. We are looking forward to the reception in the world famous St. Louis Zoo.



As usual, a frustration with organizing this conference is the large number of out of scope submissions. Researchers have no problem understanding what bioinformatics and computational biology are, but many do not know what computational intelligence is. We have a lot of work to do both as a technical committee and as part of the CIS to educate researchers and promote the use of CI techniques. In bioinformatics and computational biology, there is a growing need for computational technicians. This makes it even more critical for those of us working with biologists and physicians to be able to make the distinction between technician and researcher. CI has a lot to offer this field. We need to make sure that both computational researchers and their collaborators know this.

Educational Activities

Student Games-Based Competitions Subcommittee

- IEEE CIG 2018 [Competition/Vision/Short/Demo Papers](#) (May 15)
- IEEE WCCI 2018 [The General Video Game AI Competition](#) (Jul 15)
- New book: [Artificial Intelligence and Games](#) by Georgios N. Yannakakis and Michael Togelius
- New survey: [General Video Game AI: a Multi-Track Framework for Evaluating Agents, Games and Content Generation Algorithms](#)

- Find our subcommittee on Twitter:
@StudentGameCOMP



University Curricula Subcommittee

Are you teaching a CI course, and either some or all material can be accessed by interested learner free-of-charge? If this is the case, you are cordially invited to submit your course to the newly created [subreddit!](#)

Or do you know of a great course? If so, then tell the teaching staff about this opportunity to (1) get some exposure and (2) contribute to the education of the general public!

For more information, please contact the [subcommittee](#).



Members Activities

Call for IEEE CIS Webinars 2018

Webinars are a great way to disseminate advanced knowledge on hot topics in computational intelligence and are organized and distributed through the web free of charge to our members.

We welcome you to contact [Dr. Keeley Crockett](#) if you would like to give a webinar for the IEEE CIS during 2018. More information can be found [here](#).



Webinar: Type-2 Fuzzy Logic Systems and Their Applications

Speaker: Prof. Hani Hagrass

Date & Time: Apr 30, 14:00 BST

Call for Papers (Journal)

- [IEEE CIM Special Issue on Deep Reinforcement Learning and Games \(Oct 1\)](#)
- [IEEE TEVC Special Issue on Theoretical Foundations of Evolutionary Computation \(Oct 1\)](#)
- [IEEE TNNLS Special Issue on Recent Advances in Theory, Methodology and Applications of Imbalanced Learning \(Apr 30\)](#)
- [IEEE TETCI Special Issue on Computational Intelligence for Smart Energy Applications to Smart Cities \(May 15\)](#)
- [IEEE TETCI Special Issue on New Advances in Deep-Transfer Learning \(Jun 20\)](#)



Call for Papers (Conference)

- [IEEE Congress on Evolutionary Computation \(CEC 2019\)](#)
 - [IEEE SMC 2018 Special Session on Soft Computing: Optimization and Machine Learning with Subjective Criteria \(Apr 14\)](#)
 - [Pacific Rim International Conference on Artificial Intelligence \(PRICAI 2018\) \(Apr 14\)](#)
 - [International Workshop on Semantic and Social Media Adaptation and Personalization \(SMAP 2018\) \(Apr 23\)](#)
 - [International Conference on Neural Information Processing \(ICONIP 2018\) \(Jun 1\)](#)
 - [Australasian Joint Conference on Artificial Intelligence \(AI 2018\) \(Jul 1\)](#)
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Call for Participation

- [IEEE World Congress on Computational Intelligence \(IEEE WCCI 2018\), Rio de Janeiro, Brazil \(Jul 8-13\)](#)
 - [IEEE Conference on Computational Intelligence in Bioinformatics and Computational Biology \(CIBCB 2018\), Missouri, USA \(May 30-Jun 2\)](#)
 - [IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications \(CIVEMSA 2018\), Ottawa, Canada \(Jun 12-14\)](#)
 - [International Metaheuristics Summer School \(MESS 2018\), Taormina, Italy \(Jul 21-25\)](#)
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Career Opportunities

- [PhD Scholarship on Machine Learning for Predicting Defect-Inducing Software Changes, University of Leicester, UK \(Apr 11\)](#)
- [Research Assistant in Cyber Security and Data Handling, University of Leicester, UK \(Apr 24\)](#)
- [Fully-funded PhD Studentship in Meta-heuristic Optimisation and Machine Learning, University of Birmingham, UK \(Apr 30\)](#)
- [PhD Position in AI and Advanced Autonomy in Aerial Robotics, Aarhus University, Denmark \(May 1\)](#)

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