



## Students and Young Professionals at IEEE WCCI 2018



IEEE CIS organized a joint reception for students and young professionals at IEEE WCCI 2018 which took place on Monday 9th July in Rio de Janeiro. With such events, IEEE CIS intends to help the younger generation to boost their professional networks and be part of the society. Over 350 participants accepted the invitation and attended the event. Thanks to all participants who made this as one of the successful events and we hope you could benefit from the networking event. Looking forward to meeting you again at the next reception during SSCI 2018 in Bangalore!

## Call for Proposals to Organize CIS Sponsored Conferences in 2020

- Proposals for the organization of IEEE SSCI in 2020 must be submitted as soon as possible, and no later than **Oct. 15**.
- Proposals for the organization of all other CIS sponsored conferences in 2020 must be submitted as soon as possible, and no later than **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](#).

Bernadette Bouchon-Meunier, Vice President for Conferences

## Research Frontier

### Recent Trends in Deep Learning Based Natural Language Processing

Deep learning methods employ multiple processing layers to learn hierarchical representations of data, and have produced state-of-the-art results in many domains. Recently, a variety of model designs and methods have blossomed in the context of natural language processing (NLP). In this paper, we review significant deep learning related models and methods that have been employed for numerous NLP tasks and provide a walk-through of their evolution. We also summarize, compare and



## Important Message

### ★ Nomination for Distinguished Lecturers

The IEEE CIS DLP committee invites all Society's Technical Committees Chairs, Chapter Chairs, EiCs, and AdCom / ExCom members to nominate Distinguished Lecturers (2019-2021). The nominations should be received by **Aug. 30**. ([Details](#))

### ★ 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 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)

- ★ 2018 IEEE International

contrast the various models and put forward a detailed understanding of the past, present and future of deep learning in NLP.

IEEE Computational Intelligence Magazine, Aug. 2018

### Optimal and Autonomous Control Using Reinforcement Learning: A Survey

This paper reviews the current state of the art on reinforcement learning (RL)-based feedback control solutions to optimal regulation and tracking of single and multiagent systems. Existing RL solutions to both optimal  $H_2$  and  $H_\infty$  control problems, as well as graphical games, will be reviewed. RL methods learn the solution to optimal control and game problems online and using measured data along the system trajectories. We discuss Q-learning and the integral RL algorithm as core algorithms for discrete-time (DT) and continuous-time (CT) systems, respectively. Moreover, we discuss a new direction of off-policy RL for both CT and DT systems. Finally, we review several applications.



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

### Human-Machine Synergism in High-Level Cognitive Functioning: The Human Component

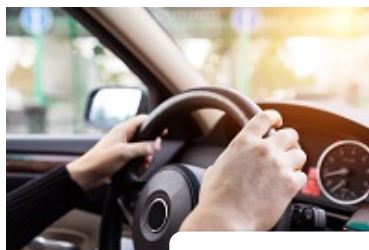
Two key issues are presented, from a human perspective, whose consideration would contribute to the creation of human-machine systems that provide synergism in high-level cognitive functioning. The key issues are 1) common meaning making – for high-level cognitive synergism, both human and machine should make the same meaning of common or correlated objects and events; and 2) common expertise development – having both human and machine develop common expertise would be one way to create common or correlated meaning making. In conclusion, the development of common or correlated meaning making would require both human and machine to learn a very large number of construed, grounded relations among objects and events within the domain of expertise in which they operate. Techniques employed in evolutionary robotics could be used to create common expertise development and therefore common meaning making. In general, meaning making should be a core feature of synergistic interaction between human and machine involving high-level cognition.



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

### Decoding Neural Correlates of Cognitive States to Enhance Driving Experience

We propose that brain-machine interfaces (BMIs) can provide complementary information that can ease the interaction with intelligent cars in order to enhance the driving experience. In our approach, the human remains in control, while a BMI is used to monitor the driver's cognitive state and use that information to modulate the assistance provided by the intelligent car. In this paper, we gather our proof-of-concept studies demonstrating the feasibility of decoding electroencephalography correlates of upcoming actions and those reflecting whether the decisions of driving assistant systems are in-line with the drivers' intentions. Experimental results while driving both simulated and real cars consistently showed neural signatures of



Conference on Data Science and Advanced Analytics (DSAA 2018)  
Turin, Italy  
Oct. 1-4, 2018

★ 2018 IEEE Smart World Congress (SmartWorld 2018)  
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)

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anticipation, movement preparation, and error processing. Remarkably, despite the increased noise inherent to real scenarios, these signals can be decoded on a single-trial basis, reflecting some of the cognitive processes that take place while driving.

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

## 5 Minutes with Prof. Alice Smith

IEEE CIS Student Activities Subcommittee invites you to get to know the pioneers and experts in the Computational Intelligence. This month "5 minutes with..." focuses on **Prof. Alice Smith**.



1. What is your title, full name, and place of work?  
Alice E. Smith, Ph.D., P.E., Joe W. Forehand/Accenture Distinguished Professor, Department of Industrial and Systems Engineering and Department of Computer Science and Software Engineering, Auburn University, USA.
2. What grade of member in CIS are you?  
Fellow.
3. How long have you been a member of CIS?  
Not sure – maybe 20 years or more.
4. One reason why you are a member of CIS  
My research focus and passion has always been computational intelligence!
5. What was your service pathway in the Computational Intelligence Society?  
I can't remember exactly but I met the Fogel brothers long ago at conferences and symposiums and were (and still am) inspired by their devotion and service to CIS. Below are the more important roles I have held:  
IEEE CIS Distinguished Lecturer, 2018-20  
IEEE CIS Administrative Committee (elected position) (2016-18)  
IEEE Evolutionary Computation Technical Committee Chair (2016-17)  
IEEE Women in Computational Intelligence Committee (2016-present)  
IEEE Transactions on Automation Science and Engineering Associate Editor (2015-present)  
IEEE Congress on Evolutionary Computation 2011 General Chair  
IEEE Transactions on Evolutionary Computation Editorial Board (1998-present)
6. What is your typical working day?  
I don't have a typical days. Some days I teach (undergraduate and graduate courses) and many days I have research meetings often with collaborators in other countries (right now I have projects going on with scholars in Turkey, Chile, Colombia, Mexico). I meet with my PHD students (I have 7 current students who are originally from the U.S., Colombia, Mexico, Turkey and Thailand).
7. What is your ideal weekend?  
Spending time outside, shopping (!), cooking on Sunday evenings, and drinking some good wine...
8. Give one interesting fact about yourself:  
I am currently studying Spanish as a non degree seeking undergraduate at my university (Auburn University). I never thought I would be an undergraduate student again! And, Spanish is so hard for me! Before Spanish, I studied Turkish but remain at a grade level of functionality.
9. What are you reading, watching or listening to at the moment:  
I just finished a book on the history of archaeological travel and I am also reading a spy thriller. On Netflix, I am working my way through Peaky Blinders. I generally listen to Tom Petty radio.

10. Favourite place:  
Central Anatolia, somewhere remote with ruins that are aged more than 1000 years.
11. Person you would most like to meet – past or present, real or fictional:  
Shakespeare. Because he is very mysterious and wrote the most glorious lines in the English language.
12. What items would you take on a desert island and why:  
Coffee, chocolate and wine. My three daily necessities.
13. Can you share with us one success story that will motivate young members and provide useful guidelines for their careers?  
I met the luminaries in evolutionary computation, including the legendary John Holland, at an intense week long, invitation only symposium on the future of EC that I was invited to when I was a very junior assistant professor in the mid 1990's. This was sponsored by the Institute for Mathematics and its Applications located at the University of Minnesota. I felt intimidated by the set of some 25 world class scholars in EC and felt I had been invited by mistake. But they all were so friendly and encouraging. They accepted me as an equal that week and many remain friends and colleagues even today. In fact, I saw Dr. Holland at breakfast alone at the hotel and introduced myself and joined him for some one-on-one time. So, be bold and seize opportunities.

## Members Activities

### IEEE CIS Webinar Competition 2018 Call for Submissions: Emerging Topics and Applications of Computational Intelligence

- Topics Include: Deep Learning, Computational Neuroscience, Brain Computer Interface, Ambient Intelligence, CI approaches to Natural Language, Artificial Life, Cultural Learning, Smart-X Technologies, Legal, Ethical and Social Impacts of CI, Internet of Things, Big Data and Big Knowledge
- Prizes: \$500 / \$300 / \$200 USD
- Opening Date: Jul. 1; Closing Date: Nov. 1
- Announcement of Winners: Awards Ceremony at IEEE SSCI 2018, India



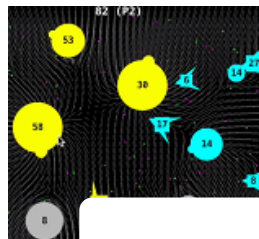
You will be required to submit a Webinar Title, Abstract, a URL to webinar (max. 30 minutes). The webinar can be submitted as an URL to any repository (e.g., YouTube, Youku, Bilibili, Dropbox, Github, Google Drive, etc...). Competition submission via [website](#).

## Educational Activities

### Short Video Competition at IEEE CIG 2018

Entries are invited for the IEEE CIG Short Video Competition, with an extended deadline of Aug. 10. Please see competition [website](#) for more details.

This is a great way to publicise your research, and the research area as a whole.



## 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 \(Oct 1\)](#)
  - [IEEE TEVC Special Issue on Parallel Evolution for Large Scale Optimization \(Nov 1\)](#)
  - [IEEE TFS Special Issue on Deep Fuzzy Models \(Oct 1\)](#)
  - [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 \(Nov 30\)](#)
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## Call for Papers (Conference)

- [IEEE Congress on Evolutionary Computation \(CEC 2019\)](#)
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## Call for Participation

- [IEEE CIS Scientific Mentoring Program](#)
  - [IEEE Conference on Computational Intelligence and Games \(CIG 2018\), Maastricht, The Netherlands \(Aug 14-17\)](#)
  - [IEEE International Conference on Developmental Learning and Epigenetic Robotics \(ICDL-EpiRob 2018\), Tokyo, Japan \(Sep 16-20\)](#)
  - [IEEE International Conference on Data Science and Advanced Analytics \(DSAA 2018\), Turin, Italy \(Oct 1-4\)](#)
  - [International Workshop on Semantic and Social Media Adaptation and Personalization \(SMAP 2018\), Zaragoza, Spain \(Sep 6-7\)](#)
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## Career Opportunities

- [Post-Doc Positions at KIOS Research and Innovation Center of Excellence, University of Cyprus \(Aug 30\)](#)
- [10 PhD Scholarships at KIOS Research and Innovation Center of Excellence, University of Cyprus \(Sep 14\)](#)
- [PhD and Postdoc Positions on Exploring Duality for Future Data-driven Modelling at KU Leuven, Belgium \(Sep 17\)](#)