IEEE SMC 2019
CONFERENCE ON SYSTEMS, MAN, AND CYBERNETICS *INDUSTRY 4.0*

FOUNDERS' FORUM

Tuesday, October 8 (90 minutes)

Location : Plenary Room

Chair: Edward Tunstel President of SMCS

The Future of Publishing for SMC

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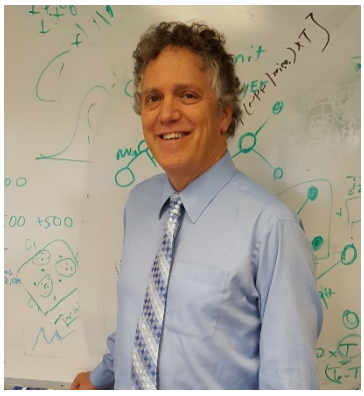
Abstract: The IEEE Systems, Man and Cybernetics Society (SMC) has gone from publishing only on paper to online and paper, to most readership online. Publications have followed a subscription model. Members and/or subscribers can read our periodicals online. This is changing in several ways due to governmental and scientific pressure for open access to publications. There are different levels of open access, platinum, gold, and green for example. Generally, open access requires article processing charges to produce a paper. This makes a paper free for readers, but authors pay to publish.



Concurrently, an open science initiative is underway. This effort focuses on replicable research with papers that are complete and code/data available to the public. The IEEE is supporting this effort through Dockers via Code Ocean and Data Port. However, there must be a sustainable model to support open access and open science. I will discuss the perils and opportunities IEEE and SMC faces from the Open Access/Open Science movement. We may continue to be an important publisher or become a

historical footnote in publishing while commercial publishers thrive, or something in between. The future will be different than the past seems the only certainty.

LAWRENCE O. HALL is a Distinguished University Professor in the Department of Computer Science and Engineering at University of South Florida. He received his Ph.D. in Computer Science from the Florida State University in 1986 and a B.S. in Applied Mathematics from the Florida Institute of Technology in 1980. He is a fellow of the IEEE. He is a fellow of the AAAS, AIMBE and IAPR. He received the Norbert Wiener award in 2012 and the Joseph Wohl award in 2017 from the IEEE SMC Society. He is a past President of the IEEE Systems, Man and Cybernetics Society, former EIC of what is now the IEEE Transactions on Cybernetics, and currently a member of the IEEE Publications, Products and Services board (PSPB), serving as Treasurer and co-leading the Open Access part of a joint TAB/PSPB strategic planning committee. His research interests lie in learning from big data, distributed machine learning, medical image understanding, bioinformatics, pattern recognition, modeling imprecision in decision making, and integrating AI into image processing. He continues to explore un and semisupervised learning using scalable fuzzy approaches. He has authored or co-authored over 90 publications in journals, as well as many conference papers and book chapters. He has received over $5M in research funding from agencies such as the National Science Foundation, National Institutes of Health, Department of Energy, DARPA, and NASA.

Data Modelling and Analysis using
the new Discriminative and Unsupervised Broad Learning System

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After a very fast and efficient discriminative Broad Learning System (BLS) that takes advantage of flatted structure and incremental learning has been developed, this talk will address data modeling with outliers and labeling errors. A robust broad learning system (RBLS) is derived by assuming the regression residual and output weights follow their respective distributions, where the output weights for robust modeling can be determined by maximum a posterior estimation. Furthermore, the robustness of RBLS can be enhanced by integrating the regularization theory. This talk will address unsupervised learning using variant BLS structures. In addition, the framework of several BLS variants with their mathematical modellings will be given. The variations include cascade, recurrent, and broad-deep combination that cover existing deep-wide/broad-wide structures. From the experimental results, the BLS/RBLS and its variations outperforms several exist learning algorithms on regression performance over function approximation, time series prediction, face recognition, and data modelling.

C. L. Philip Chen is the Chair Professor and Dean of the College of Computer Science and Engineering, South China University of Technology after been working in the US for more than 20 years in two different universities. Being a Program Evaluator of the Accreditation Board of Engineering and Technology Education (ABET) in the U.S., for computer engineering, electrical engineering, and software engineering programs, he successfully architects the University of Macau's Engineering and Computer Science programs receiving accreditations from Washington/Seoul Accord through Hong Kong Institute of Engineers (HKIE) and both programs reach top 200 in the the ranking and US News and World Reports, of which is considered as his utmost contribution in engineering/computer science education for Macau as the former Dean of the Faculty of Science and Technology. He is a Fellow of IEEE, AAAS, IAPR, CAA, and HKIE; a member of Academia Europaea (AE), European Academy of Sciences and Arts (EASA), and International Academy of Systems and Cybernetics Science (IASCYS). He received IEEE Norbert Wiener Award in 2018 for his contribution in systems and cybernetics, and machine learnings. He is also a 2018 highly cited researcher in Computer Science by Clarivate Analytics.

His current research interests include systems, cybernetics, and computational intelligence. Dr. Chen was a recipient of the 2016 Outstanding Electrical and Computer Engineers Award from his alma mater, Purdue University, after he graduated from the University of Michigan at Ann Arbor, Ann Arbor, MI, USA in 1985. He was the IEEE Systems, Man, and Cybernetics Society President from 2012 to 2013, and currently, he is the Editor-in-Chief of the IEEE Transactions on Systems, Man, and Cybernetics: Systems, and an Associate Editor of the IEEE Transactions on Fuzzy Systems, and IEEE Transactions on Cybernetics. Currently he serves as a Vice President of Chinese Association of Automation (CAA).

Organizer
Imre Rudas – President Elect of SMC Society

Moderator
Eddie Tunstel – President of SMC Society

Concluding Comments

Dimitar Filev - Junior Past President of SMCS