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Angaben zur Veröffentlichung / Publication details:

Schuller, Björn. 2018. "Editorial: Transactions on Affective Computing - good reasons for joy and excitement." *IEEE Transactions on Affective Computing* 9 (1): 1–2. https://doi.org/10.1109/TAFFC.2018.2801218.

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Editorial: Transactions on Affective Computing–Good Reasons for Joy and Excitement

Björn W. Schuller

In its ninth year, the *IEEE Transactions on Affective Computing* (*TAC*) and Affective Computing as a field still enjoy an impressively uprising trend of interest both on the academic and the industrial side as is amongst others visible by the continuous new foundation of start-ups centred around the topic. At the same time, general trends in Artificial Intelligence (AI) are clearly visible also in Artificial *Emotional* Intelligence (AEI) these days. As an example, while the field of Affective Computing has been an early adopter of *Deep Learning* techniques such as long short-term memory recurrent neural networks as early as in 2008,[1] the number of papers using Deep Learning has since risen roughly exponentially.[2] Similarly, after the journal's recent special issue now follows a first workshop on Affective Computing and *Big Data*, and in fact, one increasingly finds weakly supervised learning exploiting big social multimedia and other big data sources for training Affective Computing systems. The combination of increasingly sophisticated learning methods and exploitation of increasingly bigger data mark exciting times–not only for AI, but also for AEI, where one notices a similar boost in system performance and robustness as in many AI tasks these days. *Good reasons for excitement and joy* for the field, but also for *TAC* in several ways in the last months as follows.

Particularly good news and reason for joy give the results compiled for the journal's firsts IEEE periodic review and advisory committee exercise held every six years that showed a good rise in popularity by continuously increasing annual submission rates for the journal that has roughly doubled since its start while maintaining a low acceptance rate around 30 percent or as low as 25 percent, an outstanding gender-ratio in the editorial board, as the percentage of female associate editors of the journal exceeds the percentage of female members in the IEEE. Further, twice as high of a citation half-life value, and five times as high of an immediacy factor since the journal's start were observed which impressively demonstrates how newly published articles get increasingly rapidly cited. Equally impressively, the journal Eigenfactor increased roughly by a factor two. Most importantly, however, the official latest 2016 Impact Factor (IF) has risen to 3.149. Likewise, the journal ranks number 32 out of 154 IEEE journals in the 2016 Journal Citation Report (JCR) by 5-year IF, and number 16 out of 133 for Computer Science-Artificial Intelligence in the 2016 JCR by 5-year IF, and number 3 for Computer Science-Cybernetics by the same measure.

As the next good reason for joy and excitement, following the first ever award of the journal given at the Association for the Advancement of Affective Computing's (AAAC) 2015 6th AAAC Affective Computing and Intelligent Interaction International Conference (ACII) where the *Most Influential Papers of TAC* since their beginning had been awarded, the journal now switched into giving regular awards: At the 7th ACII 2017 held in San Antonio, Texas, from 23 to 26 October 2017, for the first time a *Best Paper in IEEE TAC* since the (last) ACII was given. 75 papers were eligible from this period. After a pre-selection based on impact by citations, 11 candidate papers served as the basis for selection by 19 Associate Editors who were allowed to vote. We heartily congratulate the winners Mohammad Soleymani, Sadjad Asghari-Esfeden, Yun Fu, and Maja Pantic in appreciation of the authors' original and impactful contribution to the field *"Analysis of EEG Signals and Facial Expressions for Continuous Emotion Detection"* as appeared in volume 7, number 1 of *TAC*.

1. *"Abandoning Emotion Classes – Towards Continuous Emotion Recognition with Modelling of Long-Range Dependencies"* was presented at Interspeech 2008.

2. For example, following a hit in 2008, three in 2010, six in 2013, 13 in 2014, 19 in 2015, and 61 in 2016 resulted from a Google Scholar search on 23 October 2017 for "emotion" as keyword in the title and "deep learning" or "DNN" or "deep neural" or "deep neuronal" or "deep net" or "CNN" or "convolutional" or "LSTM" or "long short" or "long range" or "end to end" or "GRU" or "Gated Recurrent" or "Generative Adversarial" or "encoder" or "RBM".

At the same time, at ACII 2017, the first Editor Lunch of *TAC* was held. At this occasion and together with the Steering Committee it was decided to switch to one *annual Best Technical Contribution Award of TAC* which shall follow a procedure as described above for selection, thus being partially of subjective nature, which is added by an *annual Most Cited Paper Award of TAC* purely objective second annual award. These will be announced annually but be presented at the biannual ACII every second year during the award session. In this context, an exciting step taken by the AAAC is a first interim local ACII–ACII Asia in 2018, htaking place in Beijing 20–22 May 2018 where the first ever ACII was held in 2007–roughly a decade later.

It is a further deepest joy to be able to announce that we could win the following highly esteemed two new members for the editorial board named in alphabetical order: for facial expression analysis Roland Goecke (University of Canberra, Australia), and for physiological measurement Wenming Zheng (Southeast University, P.R. China).

Again, several new reviewers also started their service–a particular thank you is dedicated in this context to all the reviewers. Without them there simply would be no peer-review. Highest quality reviewing can cost considerable amounts of time in an era where time is ever more precious. Even more so, I am more than happy to say that the reviews remained at the highest quality reviews throughout the years as also perceived by the authors: Great reason for joy is also given by the author surveys in the last year: from the first quarter and the last quarter surveys one persistently finds 100 percent of survey participants would submit again and would also *"encourage another author to submit a paper"*. At the same time, no participant found presence of poor quality reviews, and *"review time took too long"* went down from about one quarter of authors saying yes to zero saying so at the end of the year, well reflecting our continuous efforts to speed up the review process in an ever more fast paced science landscape. Similarly, 100 percent were satisfied with the edited version of their paper at the end of the year–a similar increase showing efforts well paying off also in this respect.

Further, the Steering Committee (SC) continued its outstanding service while facing some changes: The newly elected SC Chair is Hatice Gunes who serves together with the new Secretary Mohammad Soleymani alongside the new member Peter Robinson and the former Editor in Chief Jonathan Gratch for the IEEE Computer Society (CS). For the IEEE Systems, Man and Cybernetics Society (SMC) Goutam Chakraborty, and Weiming Shen continue their service. For the IEEE Computational Intelligence Society (CI) Bao-Liang Lu took up service. A particular welcome is dedicated also to the new SC member of the IEEE Signal Processing Society: Pascal Fung. For their service in the past I very much thank Arvid Kappas (CS), and Nikhil R. Pal (CI).

A minor change is also found in the brilliant staff at IEEE which can hardly be thanked enough. There, I would like to thank in particular Samantha Jacobs and Antonia Carl who recently took over her role, as well as Jennifer Carruth, Kathy Santa Maria, Hilda Carman, Kimberly Sperka, and Marisa Peacock.

It also gives me joy to mention a new open special issue to open now on *Computational Modelling of Emotion: Theory and Applications*, guest edited by Dean Petters (Birmingham City University, UK), Joel Parthemore (University of Skövde, Sweden), David Moffatt (Glasgow Caledonian University, UK), Celso De Melo (US Army Research Laboratory, US), and Christian Becker-Asano (Bosch R&D, Germany). A further special issue is planned on the best papers from ACII 2017 led by the Guest Editors Mohammad Soleymani (University of Geneva, Switzerland), Emily Mower Provost (University of Michigan, USA), and Hayley Hung (Technical University of Delft, The Netherlands).

An exciting time for the journal is also coming up by the current open call for a new Editor-in-Chief for the 2019-2020 term. After two consecutive terms, it will be my time to hand over the journal I co-founded to the next Editor-in-Chief after having it received from best hands, and which proudly holds its position as the leading journal of its field during these recent times of spotlight and exponentially growing attention for Affective Computing, overall AI, but also more and more A*E*I. By now a bit more than two decades after the coining of this exciting field, I am more than confident that the future will soon make us encounter affective and increasingly intelligent applications, agents and robots, and general computing systems and machines on a daily basis.

With best wishes for 2018,

Björn W. Schuller
Editor-in-Chief