

# Publications by Björn W. Schuller

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Current h-index: 57 (source: Google Scholar)

Current citation count: 14260 (source: Google Scholar)

Citations are only provided for papers with citation count  $\geq 100$ .

(IF): Journal Impact Factor according to Journal Citation Reports, Thomson Reuters.

(IF\*): Conference Impact Factor according to <http://citescholar.org>.

Acceptance rates and impact factors of satellite workshops may be subsumed with the main conference.

## A) BOOKS

### Books Authored (6):

- 1) B. W. Schuller, *I Know What You're Thinking: The Making of Emotional Machines*. Princeton University Press, 2018. to appear
- 2) A. Balahur-Dobrescu, M. Taboada, and B. W. Schuller, *Computational Methods for Affect Detection from Natural Language*. Computational Social Sciences, Springer, 2017. to appear
- 3) B. Schuller, *Intelligent Audio Analysis*. Signals and Communication Technology, Springer, 2013. 350 pages
- 4) B. Schuller and A. Batliner, *Computational Paralinguistics: Emotion, Affect and Personality in Speech and Language Processing*. Wiley, November 2013
- 5) K. Kroschel, G. Rigoll, and B. Schuller, *Statistische Informationstechnik*. Berlin/Heidelberg: Springer, 5th ed., 2011
- 6) B. Schuller, *Mensch, Maschine, Emotion – Erkennung aus sprachlicher und manueller Interaktion*. Saarbrücken: VDM Verlag Dr Müller, 2007. 239 pages

### Books Edited (2):

- 7) S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos, and A. Krüger, eds., *Handbook of Multimodal-Multisensor Interfaces (3 volumes)*. ACM Books, Morgan & Claypool, 2017. to appear
- 8) S. D'Mello, A. Graesser, B. Schuller, and J.-C. Martin, eds., *Proceedings of the 4th International HUMAINE Association Conference on Affective Computing and Intelligent Interaction 2011, ACII 2011*, vol. 6974/6975, Part I / Part II of *Lecture Notes on Computer Science (LNCS)*, (Memphis, TN), HUMAINE Association, Springer, October 2011

### Contributions to Books (43):

- 9) B. Schuller, A. Elkins, and K. Scherer, "Computational Analysis of Vocal Expression of Affect: Trends and Challenges," in *Social Signal Processing* (J. Burgoon, N. Magnenat-Thalmann, M. Pantic, and A. Vinciarelli, eds.), ch. 6, pp. 56–68, Cambridge University Press, 2017
- 10) B. Schuller, "Multimodal User State & Trait Recognition: An Overview," in *Handbook of Multimodal-Multisensor Interfaces* (S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos, and A. Krüger, eds.), ACM Books, Morgan & Claypool, 2017. 30 pages, to appear
- 11) B. Schuller, S. Bengio, and L.-P. Morency, "Perspectives on Predictive Power of Multimodal Deep Learning: Surprises and Future Directions," in *Handbook of Multimodal-Multisensor Interfaces* (S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos, and A. Krüger, eds.), ACM Books, Morgan & Claypool, 2017. 15 pages, to appear
- 12) B. Schuller, M. Ernst, A. Ross, and F. Ramos, "Perspectives on Strategic Fusion: What Can Neuroscience, Engineering, and Applications Experience Teach Us about Optimizing Multimodal Multi-sensor System Reliability?," in *Handbook of Multimodal-Multisensor Interfaces* (S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos, and A. Krüger, eds.), ACM Books, Morgan & Claypool, 2017. 15 pages, to appear
- 13) B. Schuller, "Real-world automatic continuous affect recognition from audiovisual signals," in *Multi-modal Behavior Analysis in the Wild: Advances and Challenges* (X. Alameda-Pineda, E. Ricci, and N. Sebe, eds.), Elsevier, 2017. to appear
- 14) S. Bengio, L. Deng, L.-P. Morency, and B. Schuller, "Multi-disciplinary Challenge Topic: Perspectives on Predictive Power of Multimodal Deep Learning: Surprises and Future Directions," in *Handbook of Multimodal-Multisensor Interfaces* (S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos, and A. Krüger, eds.), ACM Books, Morgan & Claypool, 2017. 30 pages, to appear
- 15) F. Ramos, A. Ross, and B. Schuller, "Multidisciplinary Challenge Topic: Perspectives on Strategic Fusion: What Can Neuroscience, Engineering, and Applications Experience Teach Us about Optimizing Multimodal Multi-sensor System Reliability?," in *Handbook of Multimodal-Multisensor Interfaces* (S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos, and A. Krüger, eds.), ACM Books, Morgan & Claypool, 2017. to appear
- 16) H. Gunes and B. Schuller, "Automatic Analysis of Aesthetics: Human Beauty, Attractiveness, and Likability," in *Social Signal Processing* (J. Burgoon, N. Magnenat-Thalmann, M. Pantic, and A. Vinciarelli, eds.), ch. 14, pp. 183–201, Cambridge University Press, 2017
- 17) H. Gunes and B. Schuller, "Automatic Analysis of Social Emotions," in *Social Signal Processing* (J. Burgoon, N. Magnenat-Thalmann, M. Pantic, and A. Vinciarelli, eds.), ch. 16, pp. 213–224, Cambridge University Press, 2017
- 18) V. Pandit, S. Amiriparian, M. Schmitt, K. Qian, J. Guo, S. Matsuo, and B. Schuller, "Big Data Multimedia Mining: Feature Extraction facing Volume, Velocity, and Variety," in *Big Data Analytics for Large-Scale Multimedia Search* (S. Vrochidis, B. Huet, E. Chang, and I. Kompatsiaris, eds.), Wiley, 2017. to appear
- 19) B. Schuller, "Acquisition of affect," in *Emotions and Personality in Personalized Services* (M. Tkalcic, B. De Carolis, M. de Gemmis, A. Odić, and A. Kosir, eds.), HumanComputer Interaction Series, pp. 57–80, Springer, 1st ed., 2016
- 20) F. Burkhardt, C. Pelachaud, B. Schuller, and E. Zovato, "Emotion Markup Language," in *Multimodal Interaction with W3C Standards: Towards Natural User Interfaces to Everything* (D. Dahl, ed.), pp. 65–80, Berlin/Heidelberg: Springer, 2017
- 21) G. Keren, A. E.-D. Mousa, O. Pietquin, S. Zafeiriou, and B. Schuller, "Deep Learning for Multisensorial and Multimodal Interaction," in *Handbook of Multimodal-Multisensor Interfaces* (S. Oviatt, B. Schuller, P. Cohen, D. Sonntag, G. Potamianos, and A. Krüger, eds.), ACM Books, Morgan & Claypool, 2017. 30 pages, to appear
- 22) M. Schmitt and B. Schuller, "Machine-based decoding of paralinguistic vocal features," in *The Oxford Handbook of Voice Perception* (S. Frühholz and P. Belin, eds.), ch. 40, Oxford University Press, 2015. invited contribution, to appear
- 23) B. Schuller, "Deep Learning our Everyday Emotions – A Short Overview," in *Advances in Neural Networks: Computational and Theoretical Issues Emotional Expressions and Daily Cognitive Functions* (S. Bassis, A. Esposito, and F. C. Morabito, eds.), vol. 37 of *Smart Innovation Systems and Technologies*, pp. 339–346, Berlin Heidelberg: Springer, 2015. invited contribution
- 24) B. Schuller and F. Weninger, "Human Affect Recognition – Audio-Based Methods," in *Wiley Encyclopedia of Electrical and Electronics Engineering* (J. G. Webster, ed.), pp. 1–13, New York: John Wiley & Sons, 2015. invited contribution
- 25) B. Schuller, "Multimodal Affect Databases - Collection, Challenges & Chances," in *Handbook of Affective Computing* (R. A. Calvo, S. D'Mello, J. Gratch, and A. Kappas, eds.), Oxford

- Library of Psychology, ch. 23, pp. 323–333, Oxford University Press, 2015. invited contribution
- 26) B. Schuller, “Emotion Modeling via Speech Content and Prosody – in Computer Games and Elsewhere,” in *Emotion in Games – Theory and Practice* (G. Yannakakis and K. Karpouzis, eds.), vol. 4 of *Socio-Affective Computing*, ch. 5, pp. 85–102, Springer, 2015. invited contribution
  - 27) A. Batliner, S. Steidl, F. Eyben, and B. Schuller, “On Laughter and Speech Laugh, Based on Observations of Child-Robot Interaction,” in *Phonetics of Laughing* (J. Trouvain and N. Campbell, eds.), Saarbrücken, Germany: universaar – Saarland University Press, 2015. 29 pages, to appear
  - 28) R. Brückner and B. Schuller, “Being at Odds? – Deep and Hierarchical Neural Networks for Classification and Regression of Conflict in Speech,” in *Conflict and Multimodal Communication – Social research and machine intelligence* (F. D’Errico, I. Poggi, A. Vinciarelli, and L. Vincze, eds.), Computational Social Sciences, pp. 403–429, Berlin/Heidelberg: Springer, 2015. invited contribution
  - 29) G. Castellano, H. Gunes, C. Peters, and B. Schuller, “Multimodal Affect Detection for Naturalistic Human-Computer and Human-Robot Interactions,” in *Handbook of Affective Computing* (R. A. Calvo, S. D’Mello, J. Gratch, and A. Kappas, eds.), Oxford Library of Psychology, ch. 17, pp. 246–260, Oxford University Press, 2015. invited contribution
  - 30) E. Marchi, Y. Zhang, F. Eyben, F. Ringeval, and B. Schuller, “Autism and Speech, Language, and Emotion - a Survey,” in *Evaluating the Role of Speech Technology in Medical Case Management* (H. Patil and M. Kulshreshtha, eds.), Berlin: De Gruyter, 2015. invited contribution, to appear
  - 31) F. Wenginger, M. Wöllmer, and B. Schuller, “Emotion Recognition in Naturalistic Speech and Language - A Survey,” in *Emotion Recognition: A Pattern Analysis Approach* (A. Konar and A. Chakraborty, eds.), ch. 10, pp. 237–267, Wiley, 1st ed., December 2015
  - 32) E. Marchi, F. Ringeval, and B. Schuller, “Voice-enabled assistive robots for handling autism spectrum conditions: an examination of the role of prosody,” in *Speech and Automata in Health Care (Speech Technology and Text Mining in Medicine and Healthcare)* (A. Neustein, ed.), pp. 207–236, Boston/Berlin/Munich: De Gruyter, 2014. invited contribution
  - 33) B. Schuller, “Prosody and Phonemes: On the Influence of Speaking Style,” in *Prosody and Iconicity* (S. Hancil and D. Hirst, eds.), ch. 13, pp. 233–250, Benjamins, May 2013
  - 34) B. Schuller and F. Wenginger, “Ten Recent Trends in Computational Paralinguistics,” in *4th COST 2102 International Training School on Cognitive Behavioural Systems* (A. Esposito, A. Vinciarelli, R. Hoffmann, and V. C. Müller, eds.), vol. 7403/2012 of *Lecture Notes on Computer Science (LNCS)* 7403, pp. 35–49, Berlin Heidelberg: Springer, 2012
  - 35) R. Rotili, E. Principi, M. Wöllmer, S. Squartini, and B. Schuller, “Conversational Speech Recognition In Non-Stationary Reverberated Environments,” in *4th COST 2102 International Training School on Cognitive Behavioural Systems* (A. Esposito, A. Vinciarelli, R. Hoffmann, and V. C. Müller, eds.), vol. 7403/2012 of *Lecture Notes on Computer Science (LNCS)*, pp. 50–59, Berlin Heidelberg: Springer, 2012
  - 36) R. Rotili, E. Principi, S. Squartini, and B. Schuller, “Real-Time Speech Recognition in a Multi-Talker Reverberated Acoustic Scenario,” in *Advanced Intelligent Computing Theories and Applications. With Aspects of Artificial Intelligence. Proc. Seventh International Conference on Intelligent Computing (ICIC 2011)*, vol. 6839 of *Lecture Notes on Computer Science (LNCS)*, pp. 379–386, Springer, 2012
  - 37) B. Schuller, “Voice and Speech Analysis in Search of States and Traits,” in *Computer Analysis of Human Behavior* (A. A. Salah and T. Gevers, eds.), Advances in Pattern Recognition, ch. 9, pp. 227–253, Springer, 2011
  - 38) B. Schuller and T. Knaup, “Learning and Knowledge-based Sentiment Analysis in Movie Review Key Excerpts,” in *Toward Autonomous, Adaptive, and Context-Aware Multimodal Interfaces: Theoretical and Practical Issues: Third COST 2102 International Training School, Caserta, Italy, March 15-19, 2010, Revised Selected Papers* (A. Esposito, A. M. Esposito, R. Martone, V. Müller, and G. Scarpetta, eds.), vol. 6456/2010 of *Lecture Notes on Computer Science (LNCS)*, pp. 448–472, Heidelberg: Springer, 1st ed., 2011
  - 39) B. Schuller, M. Wöllmer, F. Eyben, and G. Rigoll, “Retrieval of Paralinguistic Information in Broadcasts,” in *Multimedia Information Extraction: Advances in video, audio, and imagery extraction for search, data mining, surveillance, and authoring* (M. T. Maybury, ed.), ch. 17, pp. 273–288, Wiley, IEEE Computer Society Press, 2011
  - 40) D. Arsić and B. Schuller, “Real Time Person Tracking and Behavior Interpretation in Multi Camera Scenarios Applying Homography and Coupled HMMs,” in *Analysis of Verbal and Nonverbal Communication and Enactment: The Processing Issues, COST 2102 International Conference, Budapest, Hungary, September 7-10, 2010, Revised Selected Papers* (A. Esposito, A. Vinciarelli, K. Vicsi, C. Pelachaud, and A. Nijholt, eds.), vol. 6800/2011 of *Lecture Notes on Computer Science (LNCS)*, pp. 1–18, Heidelberg: Springer, 2011
  - 41) B. Schuller, F. Dibiasi, F. Eyben, and G. Rigoll, “Music Thumbnailing Incorporating Harmony- and Rhythm Structure,” in *Adaptive Multimedia Retrieval: 6th International Workshop, AMR 2008, Berlin, Germany, June 26-27, 2008. Revised Selected Papers* (M. Detyniecki, U. Leiner, and A. Nürnberger, eds.), vol. 5811/2010 of *Lecture Notes in Computer Science (LNCS)*, pp. 78–88, Berlin/Heidelberg: Springer, 2010
  - 42) A. Batliner, B. Schuller, D. Seppi, S. Steidl, L. Devillers, L. Vidrascu, T. Vogt, V. Aharonson, and N. Amir, “The Automatic Recognition of Emotions in Speech,” in *Emotion-Oriented Systems: The HUMAINE Handbook* (R. Cowie, P. Petta, and C. Pelachaud, eds.), Cognitive Technologies, pp. 71–99, Springer, 1st ed., 2010
  - 43) M. Wöllmer, F. Eyben, A. Graves, B. Schuller, and G. Rigoll, “Improving Keyword Spotting with a Tandem BLSTM-DBN Architecture,” in *Advances in Non-Linear Speech Processing: International Conference on Nonlinear Speech Processing, NO-LISP 2009, Vic, Spain, June 25-27, 2009, Revised Selected Papers* (J. Sole-Casals and V. Zaiats, eds.), vol. 5933/2010 of *Lecture Notes on Computer Science (LNCS)*, pp. 68–75, Springer, 2010
  - 44) B. Schuller, M. Wöllmer, F. Eyben, and G. Rigoll, “Spectral or Voice Quality? Feature Type Relevance for the Discrimination of Emotion Pairs,” in *The Role of Prosody in Affective Speech* (S. Hancil, ed.), vol. 97 of *Linguistic Insights, Studies in Language and Communication*, pp. 285–307, Peter Lang Publishing Group, 2009
  - 45) B. Schuller, F. Eyben, and G. Rigoll, “Static and Dynamic Modelling for the Recognition of Non-Verbal Vocalisations in Conversational Speech,” in *Perception in Multimodal Dialogue Systems: 4th IEEE Tutorial and Research Workshop on Perception and Interactive Technologies for Speech-Based Systems, PIT 2008, Kloster Irsee, Germany, June 16-18, 2008, Proceedings* (E. André, L. Dybkjaer, H. Neumann, R. Pieraccini, and M. Weber, eds.), vol. 5078/2008 of *Lecture Notes on Computer Science (LNCS)*, pp. 99–110, Berlin/Heidelberg: Springer, 2008
  - 46) B. Schuller, M. Wöllmer, T. Moosmayr, G. Ruske, and G. Rigoll, “Switching Linear Dynamic Models for Noise Robust In-Car Speech Recognition,” in *Pattern Recognition: 30th DAGM Symposium Munich, Germany, June 10-13, 2008 Proceedings* (G. Rigoll, ed.), vol. 5096 of *Lecture Notes on Computer Science (LNCS)*, pp. 244–253, Berlin/Heidelberg: Springer, 2008. (acceptance rate: 39%, IF\* 1.13 (2010))
  - 47) B. Vlasenko, B. Schuller, A. Wendemuth, and G. Rigoll, “On the Influence of Phonetic Content Variation for Acoustic Emotion Recognition,” in *Perception in Multimodal Dialogue Sys-*

- tems: 4th IEEE Tutorial and Research Workshop on Perception and Interactive Technologies for Speech-Based Systems, PIT 2008, Kloster Irsee, Germany, June 16-18, 2008, Proceedings (E. André, L. Dybkjaer, H. Neumann, R. Pieraccini, and M. Weber, eds.), vol. 5078/2008 of *Lecture Notes on Computer Science (LNCS)*, pp. 217–220, Berlin/Heidelberg: Springer, 2008
- 48) M. Grimm, K. Kroschel, H. Harris, C. Nass, B. Schuller, G. Rigoll, and T. Moosmayr, “On the Necessity and Feasibility of Detecting a Driver’s Emotional State While Driving,” in *Affective Computing and Intelligent Interaction: Second International Conference, ACII 2007, Lisbon, Portugal, September 12-14, 2007, Proceedings* (A. Paiva, R. W. Picard, and R. Prada, eds.), vol. 4738/2007 of *Lecture Notes on Computer Science (LNCS)*, pp. 126–138, Berlin/Heidelberg: Springer, 2007
  - 49) B. Vlasenko, B. Schuller, A. Wendemuth, and G. Rigoll, “Frame vs. Turn-Level: Emotion Recognition from Speech Considering Static and Dynamic Processing,” in *Affective Computing and Intelligent Interaction: Second International Conference, ACII 2007, Lisbon, Portugal, September 12-14, 2007, Proceedings* (A. Paiva, R. W. Picard, and R. Prada, eds.), vol. 4738/2007 of *Lecture Notes on Computer Science (LNCS)*, pp. 139–147, Berlin/Heidelberg: Springer, 2007
  - 50) M. Schröder, L. Devillers, K. Karpouzis, J.-C. Martin, C. Pelachaud, C. Peter, H. Pirker, B. Schuller, J. Tao, and I. Wilson, “What should a generic emotion markup language be able to represent?,” in *Affective Computing and Intelligent Interaction: Second International Conference, ACII 2007, Lisbon, Portugal, September 12-14, 2007, Proceedings* (A. Paiva, R. W. Picard, and R. Prada, eds.), vol. 4738/2007 of *Lecture Notes on Computer Science (LNCS)*, pp. 440–451, Berlin/Heidelberg: Springer, 2007
  - 51) B. Schuller, M. Ablameier, R. Müller, S. Reifinger, T. Poitschke, and G. Rigoll, “Speech Communication and Multimodal Interfaces,” in *Advanced Man Machine Interaction* (K.-F. Kraiss, ed.), Signals and Communication Technology, ch. 4, pp. 141–190, Berlin/Heidelberg: Springer, 2006
- B) REFEREED JOURNAL PAPERS (97)
- 52) B. Schuller, “Can Affective Computing Save Lives? Meet Mobile Health,” *IEEE Computer Magazine*, vol. 50, p. 40, 2017. (IF: 1.438 (2013))
  - 53) J. Deng, S. Frühholz, Z. Zhang, and B. Schuller, “Recognizing Emotions From Whispered Speech Based on Acoustic Feature Transfer Learning,” *IEEE Access*, vol. 5, pp. 5235–5246, December 2017. (IF: 1.270, 5-year IF: 1.276 (2015))
  - 54) J. Deng, X. Xu, Z. Zhang, S. Frühholz, and B. Schuller, “Universum Autoencoder-based Domain Adaptation for Speech Emotion Recognition,” *IEEE Signal Processing Letters*, vol. 24, 2017. 5 pages, to appear (acceptance rate: 17 %, IF: 1.674, 5-year IF: 1.595 (2012))
  - 55) J. Guo, K. Qian, G. Zhang, H. Xu, and B. Schuller, “Accelerating biomedical signal processing using GPU: A case study of snore sounds feature extraction,” *Interdisciplinary Sciences – Computational Life Sciences*, vol. 9, 2017. 11 pages, to appear (IF: 0.853 (2015))
  - 56) C. Janott, B. Schuller, and C. Heiser, “Akustische Informationen von Schnarchgeräuschen,” *HNO, Leitthemenheft “Schlafmedizin”*, vol. 22, pp. 1–10, February 2017. (IF: 0.852 (2015))
  - 57) E. Marchi, F. Vesperini, S. Squartini, and B. Schuller, “Deep Recurrent Neural Network-based Autoencoders for Acoustic Novelty Detection,” *Computational Intelligence and Neuroscience*, vol. 2017, 2017. 14 pages (IF: 0.430 (2015))
  - 58) P. B. Marschik, F. B. Pokorny, R. Peharz, D. Zhang, J. O’Muircheartaigh, H. Roeyers, S. Bölte, A. J. Spittle, B. Urlsberger, B. Schuller, L. Poustka, S. Ozonoff, F. Pernkopf, T. Pock, K. Tammimies, C. Enzinger, M. Krieger, I. Tomantschger, K. D. Bartl-Pokorny, J. Sigafos, L. Roche, G. Esposito, M. Gugatschka, K. Nielsen-Saines, C. Einspieler, W. E. Kaufmann, and The BEE-PRI study group, “A Novel Way to Measure and Predict Development: A Heuristic Approach to Facilitate the Early Detection of Neurodevelopmental Disorders,” *Current Neurology and Neuroscience Reports*, vol. 17, no. 43, 2017. 15 pages (IF: 2.961, 5-year IF: 3.064 (2015))
  - 59) K. Qian, Z. Zhang, A. Baird, and B. Schuller, “Active Learning for Bird Sounds Classification,” *Acta Acustica united with Acustica*, vol. 103, pp. 361–364, April 2017. (IF: 0.897 (2015))
  - 60) O. Rudovic, J. Lee, L. Mascarell-Maricic, B. W. Schuller, and R. Picard, “Measuring Engagement in Autism Therapy with Social Robots: a Cross-cultural Study,” *Frontiers in Robotics and AI, section Humanoid Robotics, Special Issue on Affective and Social Signals for HRI*, 2017. to appear
  - 61) M. Schmitt and B. Schuller, “openXBOW – Introducing the Passau Open-Source Crossmodal Bag-of-Words Toolkit,” *Journal of Machine Learning Research*, vol. 18, 2017. 5 pages, to appear (acceptance rate: 18 %, IF: 2.450, 5-year IF: 5.587 (2015))
  - 62) M. Soleymani, D. Garcia, B. Jou, B. Schuller, S.-F. Chang, and M. Pantic, “A Survey of Multimodal Sentiment Analysis,” *Image and Vision Computing, Special Issue on Multimodal Sentiment Analysis and Mining in the Wild*, vol. 35, 2017. 23 pages, to appear (IF: 1.766, 5-year IF: 2.584 (2015))
  - 63) G. Trigeorgis, K. Bousmalis, S. Zafeiriou, and B. Schuller, “A deep matrix factorization method for learning attribute representations,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 39, pp. 417–429, March 2017. (IF: 6.077, 5-year IF: 8.693 (2015))
  - 64) G. Trigeorgis, M. A. Nicolaou, S. Zafeiriou, and B. Schuller, “Deep Canonical Time Warping for simultaneous alignment and representation learning of sequences,” *IEEE Transactions on Pattern Analysis and Machine Intelligence*, vol. 39, 2017. 12 pages, to appear (IF: 6.077, 5-year IF: 8.693 (2015))
  - 65) X. Xu, J. Deng, N. Cummins, Z. Zhang, C. Wu, L. Zhao, and B. Schuller, “A Two-Dimensional Framework of Multiple Kernel Subspace Learning for Recognising Emotion in Speech,” *IEEE/ACM Transactions on Audio, Speech and Language Processing*, vol. 25, 2017. 15 pages, to appear (acceptance rate: 25 %, IF: 2.625, 5-year IF: 2.583 (2013))
  - 66) Z. Zhang, N. Cummins, and B. Schuller, “Advanced Data Exploitation in Speech Analysis – An Overview,” *IEEE Signal Processing Magazine*, vol. 34, July 2017. 24 pages, to appear (IF: 6.671 (2015))
  - 67) B. Schuller, “Can Virtual Human Interviewers “Hear” Real Humans’ Depression?,” *IEEE Computer Magazine*, vol. 49, p. 8, July 2016. (IF: 1.438 (2013))
  - 68) B. Schuller, “Speech Emotion Recognition: 20 Years and Beyond,” *Communications of the ACM*, 2016. 8 pages, to appear (IF: 3.301, 5-year IF: 4.425 (2015))
  - 69) J. Deng, X. Xu, Z. Zhang, S. Frühholz, and B. Schuller, “Exploitation of Phase-based Features for Whispered Speech Emotion Recognition,” *IEEE Access*, vol. 4, pp. 4299–4309, July 2016. (IF: 1.270, 5-year IF: 1.276 (2015))
  - 70) F. Eyben, K. Scherer, B. Schuller, J. Sundberg, E. André, C. Busso, L. Devillers, J. Epps, P. Laukka, S. Narayanan, and K. Truong, “The Geneva Minimalistic Acoustic Parameter Set (GeMAPS) for Voice Research and Affective Computing,” *IEEE Transactions on Affective Computing*, vol. 7, pp. 190–202, April–June 2016. (acceptance rate: 22 %, IF: 3.466, 5-year IF: 3.871 (2013))
  - 71) F. Gross, J. Jordan, F. Weninger, F. Klanner, and B. Schuller, “Route and Stopping Intent Prediction at Intersections from Car Fleet Data,” *IEEE Transactions on Intelligent Vehicles*, vol. 1, pp. 177–186, June 2016
  - 72) W. Han, E. Coutinho, H. Ruan, H. Li, B. Schuller, X. Yu, and X. Zhu, “Semi-Supervised Active Learning for Sound Classification in Hybrid Learning Environments,” *PLoS ONE*, vol. 11, no. 9, 2016. 23 pages (IF: 3.234 (2014))
  - 73) J. Han, Z. Zhang, N. Cummins, F. Ringeval, and B. Schuller, “Strength Modelling for Real-World Automatic Continuous Af-

- fect Recognition from Audiovisual Signals,” *Image and Vision Computing, Special Issue on Multimodal Sentiment Analysis and Mining in the Wild*, vol. 34, 2016. 12 pages, to appear (IF: 1.766, 5-Year IF: 2.584 (2015))
- 74) S. Hantke, F. Weninger, R. Kurle, F. Ringeval, A. Batliner, A. El-Desoky Mousa, and B. Schuller, “I Hear You Eat and Speak: Automatic Recognition of Eating Condition and Food Types, Use-Cases, and Impact on ASR Performance,” *PLoS ONE*, vol. 11, pp. 1–24, May 2016. (IF: 3.234 (2014))
- 75) F. Lingenfelser, J. Wagner, J. Deng, R. Brueckner, B. Schuller, and E. André, “Asynchronous and Event-based Fusion Systems for Affect Recognition on Naturalistic Data in Comparison to Conventional Approaches,” *IEEE Transactions on Affective Computing*, vol. 7, 2016. 13 pages, to appear (IF: 3.466, 5-year IF: 3.871 (2013))
- 76) E. Marchi, S. Frühholz, and B. Schuller, “The Effect of Narrow-band Transmission on Recognition of Paralinguistic Information from Human Vocalizations,” *IEEE Access*, vol. 4, pp. 6059–6072, October 2016. (IF: 1.270, 5-year IF: 1.276 (2015))
- 77) A. Mencattini, E. Martinelli, F. Ringeval, B. Schuller, and C. Di Natale, “Continuous Estimation of Emotions in Speech by Dynamic Cooperative Speaker Models,” *IEEE Transactions on Affective Computing*, vol. 7, 2016. 14 pages, to appear (IF: 3.466, 5-year IF: 3.871 (2013))
- 78) K. Qian, C. Janott, V. Pandit, Z. Zhang, C. Heiser, W. Hohenhorst, M. Herzog, W. Hemmert, and B. Schuller, “Classification of the Excitation Location of Snore Sounds in the Upper Airway by Acoustic Multi-Feature Analysis,” *IEEE Transactions on Biomedical Engineering*, 2016. 11 pages, to appear (IF: 2.468, 5-year IF: 2.719 (2015))
- 79) A. Rynkiewicz, B. Schuller, E. Marchi, S. Piana, A. Camurri, A. Lassalle, and S. Baron-Cohen, “An investigation of the ‘female camouflage effect’ in autism using a computerized ADOS-2, and a test of sex/gender differences,” *Molecular Autism*, vol. 7, no. 10, 2016. 10 pages (IF: 5.413 (2014))
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### C) REFEREED CONFERENCE PROCEEDINGS

#### *Contributions to Conference Proceedings (367):*

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- 156) N. Cummins, B. Vlasenko, H. Sagha, and B. Schuller, “Enhancing speech-based depression detection through gender dependent vowel level formant features,” in *Proc. 16th Conference on Artificial Intelligence in Medicine (AIME)*, (Vienna, Austria), Society for Artificial Intelligence in Medicine (AIME), June 2017. 5 pages, to appear
- 157) N. Cummins, M. Schmitt, S. Amiriparian, J. Krajewski, and B. Schuller, “You sound ill, take the day off: Classification of speech affected by Upper Respiratory Tract Infection,” in *Proceedings of the 39th Annual International Conference of the IEEE Engineering in Medicine & Biology Society, EMBC 2017*, (Jeju Island, South Korea), IEEE, IEEE, July 2017. 4 pages, to appear
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- 162) J. Guo, K. Qian, B. W. Schuller, and S. Matsuoka, “GPU-based Training of Autoencoders for Bird Sound Data Processing,” in *Proceedings IEEE International Conference on Consumer Electronics Taiwan, ICCE-TW 2017*, (Taipei, Taiwan), IEEE, IEEE, June 2017. 2 pages, to appear
- 163) G. Hagerer, N. Cummins, F. Eyben, and B. Schuller, ““Did you laugh enough today?” – Deep Neural Networks for Mobile and Wearable Laughter Trackers,” in *Proceedings INTERSPEECH 2017, 18th Annual Conference of the International Speech Communication Association*, (Stockholm, Sweden), ISCA, ISCA, August 2017. 2 pages, Show & Tell demonstration, to appear (acceptance rate: 50 %)
- 164) G. Hagerer, V. Pandit, F. Eyben, and B. Schuller, “Enhancing LSTM RNN-based Speech Overlap Detection by Artificially Mixed Data,” in *Proceedings AES 56th International Conference on Semantic Audio*, (Erlangen, Germany), pp. 1–8, AES, Audio Engineering Society, June 2017. to appear
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- 173) F. Pokorný, B. Schuller, P. Marschik, R. Brückner, P. Nyström, N. Cummins, S. Bölte, C. Einspieler, and T. Falck-Ytter, "Earlier Identification of Children with Autism Spectrum Disorder: An Automatic Vocalisation-based Approach," in *Proceedings INTERSPEECH 2017, 18th Annual Conference of the International Speech Communication Association*, (Stockholm, Sweden), ISCA, ISCA, August 2017. 5 pages, to appear (acceptance rate: 50 %)
- 174) K. Qian, C. Janott, J. Deng, C. Heiser, W. Hohenhorst, N. Cummins, and B. Schuller, "Snore Sound Recognition: On Wavelets and Classifiers from Deep Nets to Kernels," in *Proceedings of the 39th Annual International Conference of the IEEE Engineering in Medicine & Biology Society, EMBC 2017*, (Jeju Island, South Korea), IEEE, IEEE, July 2017. 4 pages, to appear
- 175) O. Rudovic, J. Lee, L. Mascarell-Maricic, B. W. Schuller, and R. Picard, "Engagement in Autism Therapy with Social Robots: a Cross-cultural Study," in *Proceedings International Conference on Robotics and Automation, ICRA*, (Singapore, Singapore), IEEE, IEEE, May–June 2017. 1 page, to appear
- 176) R. Sabathé, E. Coutinho, and B. Schuller, "Deep Recurrent Music Writer: Memory-enhanced Variational Autoencoder-based Musical Score Composition and an Objective Measure," in *Proceedings 30th International Joint Conference on Neural Networks (IJCNN)*, (Anchorage, AK), pp. 3467–3474, IEEE, IEEE, May 2017. (acceptance rate: 67 %)
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- 179) R. Walecki, O. Rudovic, V. Pavlovic, B. Schuller, and M. Pantic, "Deep Structured Ordinal Regression for Facial Action Unit Intensity Estimation," in *Proceedings IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2017*, (Honolulu, HI), IEEE, IEEE, July 2017. (acceptance rate: 20 %, IF\* 5.97 (2010))
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- 183) B. Schuller, "7 Essential Principles to Make Multimodal Sentiment Analysis Work in the Wild," in *Proceedings of the 4th Workshop on Sentiment Analysis where AI meets Psychology (SAAIP 2016)*, satellite of the 25th International Joint Conference on Artificial Intelligence, IJCAI 2016 (S. Bandyopadhyay, D. Das, E. Cambria, and B. G. Patra, eds.), vol. 1619, (New York City, NY), p. 1, IJCAI/AAAI, CEUR, July 2016. invited contribution
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- 185) B. Schuller and M. McTear, "Sociocognitive Language Processing - Emphasising the Soft Factors," in *Proceedings of the Seventh International Workshop on Spoken Dialogue Systems (IWSDS)*, (Saariselkä, Finland), January 2016. 6 pages
- 186) B. Schuller, S. Steidl, A. Batliner, J. Hirschberg, J. K. Burgoon, A. Baird, A. Elkins, Y. Zhang, E. Coutinho, and K. Evanini, "The INTERSPEECH 2016 Computational Paralinguistics Challenge: Deception, Sincerity & Native Language," in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 2001–2005, ISCA, ISCA, September 2016. (acceptance rate: 50 %)
- 187) I. Abdić, L. Fridman, D. McDuff, E. Marchi, B. Reimer, and B. Schuller, "Driver Frustration Detection From Audio and Video," in *Proceedings of the 25th International Joint Conference on Artificial Intelligence, IJCAI 2016*, (New York City, NY), pp. 1354–1360, IJCAI/AAAI, July 2016. (acceptance rate: 25 %)
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- 190) S. Amiriparian, J. Pohjalainen, E. Marchi, S. Pugachevskiy, and B. Schuller, "Is deception emotional? An emotion-driven predictive approach," in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 2011–2015, ISCA, ISCA, September 2016. nominated for best student paper award (12 nominations for 3 awards, acceptance rate overall conference: 50 %)
- 191) E. Cambria, S. Poria, R. Bajpai, and B. Schuller, "SenticNet4: A Semantic Resource for Sentiment Analysis Based on Conceptual Primitives," in *Proceedings of the 26th International Conference on Computational Linguistics, COLING*, (Osaka, Japan), pp. 2666–2677, ICCL, ANLP, December 2016
- 192) E. Coutinho, F. Höning, Y. Zhang, S. Hantke, A. Batliner, E. Nöth, and B. Schuller, "Assessing the Prosody of Non-Native Speakers of English: Measures and Feature Sets," in *Proceedings 10th Language Resources and Evaluation Conference (LREC 2016)*, (Portoroz, Slovenia), pp. 1328–1332, ELRA, ELRA, May 2016
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- 666, Springer, November 2016
- 194) B. Dong, Z. Zhang, and B. Schuller, "Empirical Mode Decomposition: A Data-Enrichment Perspective on Speech Emotion Recognition," in *Proceedings of the 6th International Workshop on Emotion and Sentiment Analysis (ESA 2016), satellite of the 10th Language Resources and Evaluation Conference (LREC 2016)* (J. Sánchez-Rada and B. Schuller, eds.), (Portoroz, Slovenia), pp. 71–75, ELRA, ELRA, May 2016. (acceptance rate: 74 %)
  - 195) J. Guo, K. Qian, H. Xu, C. Janott, B. W. Schuller, and S. Matsuoka, "GPU-Based Fast Signal Processing for Large Amounts of Snore Sound Data," in *Proceedings IEEE 5th Global Conference on Consumer Electronics, GCCE 2016*, (Kyoto, Japan), pp. 523–524, IEEE, IEEE, October 2016. (acceptance rate: 66 %)
  - 196) S. Hantke, A. Batliner, and B. Schuller, "Ethics for Crowdsourced Corpus Collection, Data Annotation and its Application in the Web-based Game iHEARu-PLAY," in *Proceedings of the 1st International Workshop on ETHics In Corpus Collection, Annotation and Application (ETHI-CA<sup>2</sup> 2016), satellite of the 10th Language Resources and Evaluation Conference (LREC 2016)* (L. Devillers, B. Schuller, E. Mower Provost, P. Robinson, J. Mariani, and A. Delaborde, eds.), (Portoroz, Slovenia), pp. 54–59, ELRA, ELRA, May 2016. (oral acceptance rate: 45 %)
  - 197) S. Hantke, E. Marchi, and B. Schuller, "Introducing the Weighted Trustability Evaluator for Crowdsourcing Exemplified by Speaker Likability Classification," in *Proceedings 10th Language Resources and Evaluation Conference (LREC 2016)*, (Portoroz, Slovenia), pp. 2156–2161, ELRA, ELRA, May 2016
  - 198) G. Keren, J. Deng, J. Pohjalainen, and B. Schuller, "Convolutional Neural Networks and Data Augmentation for Classifying Speakers' Native Language," in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 2393–2397, ISCA, ISCA, September 2016. (acceptance rate: 50 %)
  - 199) G. Keren and B. Schuller, "Convolutional RNN: an Enhanced Model for Extracting Features from Sequential Data," in *Proceedings 2016 International Joint Conference on Neural Networks (IJCNN) as part of the IEEE World Congress on Computational Intelligence (IEEE WCCI)*, (Vancouver, Canada), pp. 3412–3419, IEEE, IEEE, July 2016
  - 200) G. Keren, S. Sabato, and B. Schuller, "Tunable Sensitivity to Large Errors in Neural Network Training," in *Proceedings of the 31st AAAI Conference on Artificial Intelligence, AAAI 17*, (San Francisco, CA), AAAI, February 2017. 10 pages, to appear (acceptance rate: 25 %)
  - 201) Y. Li, J. Tao, B. Schuller, S. Shan, D. Jiang, and J. Jia, "MEC 2016: The Multimodal Emotion Recognition Challenge of CCPR 2016," in *Proceedings of the 7th Chinese Conference on Pattern Recognition, CCPR*, (Chengdu, P.R. China), pp. 667–678, Springer, November 2016
  - 202) E. Marchi, D. Tonelli, X. Xu, F. Ringeval, J. Deng, S. Squartini, and B. Schuller, "Pairwise Decomposition with Deep Neural Networks and Multiscale Kernel Subspace Learning for Acoustic Scene Classification," in *Proceedings of the Detection and Classification of Acoustic Scenes and Events 2016 IEEE AASP Challenge Workshop (DCASE 2016), satellite to EUSIPCO 2016*, (Budapest, Hungary), pp. 1–5, EUSIPCO, IEEE, September 2016
  - 203) E. Marchi, F. Eyben, G. Hagerer, and B. W. Schuller, "Real-time Tracking of Speakers' Emotions, States, and Traits on Mobile Platforms," in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 1182–1183, ISCA, ISCA, September 2016. Show & Tell demonstration (acceptance rate: 50 %)
  - 204) E. Marchi, D. Tonelli, X. Xu, F. Ringeval, J. Deng, S. Squartini, and B. Schuller, "The UP System for the 2016 DCASE Challenge using Deep Recurrent Neural Network and Multiscale Kernel Subspace Learning," in *Proceedings of the Detection and Classification of Acoustic Scenes and Events 2016 IEEE AASP Challenge Workshop (DCASE 2016), satellite to EUSIPCO 2016*, (Budapest, Hungary), EUSIPCO, IEEE, September 2016. 1 page
  - 205) A. E.-D. Mousa and B. Schuller, "Deep Bidirectional Long Short-Term Memory Recurrent Neural Networks for Grapheme-to-Phoneme Conversion utilizing Complex Many-to-Many Alignments," in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 2836–2840, ISCA, ISCA, September 2016. (acceptance rate: 50 %)
  - 206) F. B. Pokorny, P. B. Marschik, C. Einspieler, and B. W. Schuller, "Does She Speak RTT? Towards an Earlier Identification of Rett Syndrome Through Intelligent Pre-linguistic Vocalisation Analysis," in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 1953–1957, ISCA, ISCA, September 2016. (acceptance rate: 50 %)
  - 207) F. B. Pokorny, R. Peharz, W. Roth, M. Zohrer, F. Pernkopf, P. B. Marschik, and B. W. Schuller, "Manual Versus Automated: The Challenging Routine of Infant Vocalisation Segmentation in Home Videos to Study Neuro(mal)development," in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 2997–3001, ISCA, ISCA, September 2016. (acceptance rate: 50 %)
  - 208) K. Qian, C. Janott, Z. Zhang, C. Heiser, and B. Schuller, "Wavelet Features for Classification of VOTE Snore Sounds," in *Proceedings 41st IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2016*, (Shanghai, P.R. China), pp. 221–225, IEEE, IEEE, March 2016. (acceptance rate: 45 %, IF\* 1.16 (2010))
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- 216) M. Schmitt, C. Janott, V. Pandit, K. Qian, C. Heiser, W. Hemmert, and B. Schuller, “A Bag-of-Audio-Words Approach for Snore Sounds’ Excitation Localisation,” in *Proceedings 14th ITG Conference on Speech Communication*, vol. 267 of *ITG-Fachbericht*, (Paderborn, Germany), pp. 230–234, ITG/VDE, IEEE/VDE, October 2016. nominated for best student paper award (4 nominations for 2 awards)
- 217) M. Schmitt, F. Ringeval, and B. Schuller, “At the Border of Acoustics and Linguistics: Bag-of-Audio-Words for the Recognition of Emotions in Speech,” in *Proceedings INTERSPEECH 2016, 17th Annual Conference of the International Speech Communication Association*, (San Francisco, CA), pp. 495–499, ISCA, ISCA, September 2016. (acceptance rate: 50%)
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- 219) M. Telespan and B. Schuller, “Audio Watermarking Based on Empirical Mode Decomposition and Beat Detection,” in *Proceedings 41st IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP 2016*, (Shanghai, P.R. China), pp. 2124–2128, IEEE, IEEE, March 2016. (acceptance rate: 45%, IF\* 1.16 (2010))
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- 222) M. Valstar, J. Gratch, B. Schuller, F. Ringeval, D. Lalanne, M. Torres Torres, S. Scherer, G. Stratou, R. Cowie, and M. Pantic, “AVEC 2016: Depression, Mood, and Emotion Recognition Workshop and Challenge,” in *Proceedings of the 6th International Workshop on Audio/Visual Emotion Challenge, AVEC’16, co-located with the 24th ACM International Conference on Multimedia, MM 2016* (M. Valstar, J. Gratch, B. Schuller, F. Ringeval, R. Cowie, and M. Pantic, eds.), (Amsterdam, The Netherlands), pp. 3–10, ACM, ACM, October 2016
- 223) M. Valstar, C. Pelachaud, D. Heylen, A. Cafaro, S. Dermouche, A. Ghitulescu, E. André, T. Bauer, J. Wagner, L. Durieu, M. Aylett, P. Blaise, E. Coutinho, B. Schuller, Y. Zhang, M. Theune, and J. van Waterschoot, “Ask Alice; an Artificial Retrieval of Information Agent,” in *Proceedings of the 18th ACM International Conference on Multimodal Interaction, ICMI (L.-P. Morency, C. Busso, and C. Pelachaud, eds.)*, (Tokyo, Japan), pp. 419–420, ACM, ACM, November 2016. (IF\* 1.77 (2010))
- 224) M. Valstar, J. Gratch, B. Schuller, F. Ringeval, R. Cowie, and M. Pantic, “Summary for AVEC 2016: Depression, Mood, and Emotion Recognition Workshop and Challenge,” in *Proceedings of the 24th ACM International Conference on Multimedia, MM 2016*, (Amsterdam, The Netherlands), pp. 1483–1484, ACM, ACM, October 2016. (acceptance rate short paper: 30%, IF\* 2.45 (2010))
- 225) B. Vlasenko, B. Schuller, and A. Wendemuth, “Tendencies Regarding the Effect of Emotional Intensity in Inter Corpus Phoneme-Level Speech Emotion Modelling,” in *Proceedings 2016 IEEE International Workshop on Machine Learning for Signal Processing, MLSP*, (Salerno, Italy), pp. 1–6, IEEE, IEEE, September 2016
- 226) R. Wegener, C. Kohlschein, S. Jeschke, and B. Schuller, “Automatic Detection of Textual Triggers of Reader Emotion in Short Stories,” in *Proceedings of the 6th International Workshop on Emotion and Sentiment Analysis (ESA 2016), satellite of the 10th Language Resources and Evaluation Conference (LREC 2016)* (J. Sánchez-Rada and B. Schuller, eds.), (Portoroz, Slovenia), pp. 80–84, ELRA, ELRA, May 2016. (acceptance rate: 74%)
- 227) F. Weninger, F. Ringeval, E. Marchi, and B. Schuller, “Discriminatively trained recurrent neural networks for continuous dimensional emotion recognition from audio,” in *Proceedings of the 25th International Joint Conference on Artificial Intelligence, IJCAI 2016*, (New York City, NY), pp. 2196–2202, IJCAI/AAAI, July 2016. (acceptance rate: 25%)
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- 229) X. Xu, J. Deng, M. Gavryukova, Z. Zhang, L. Zhao, and B. Schuller, “Multiscale Kernel Locally Penalised Discriminant Analysis Exemplified by Emotion Recognition in Speech,” in *Proceedings of the 18th ACM International Conference on Multimodal Interaction, ICMI (L.-P. Morency, C. Busso, and C. Pelachaud, eds.)*, (Tokyo, Japan), pp. 233–237, ACM, ACM, November 2016. (IF\* 1.77 (2010))
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- 588) O. Rudovic, V. Evers, M. Pantic, B. Schuller, and S. Petrovic, "DE-ENIGMA Robots: Playfully Empowering Children with Autism," in *Proceedings XI Autism-Europe International Congress*, (Edinburgh, Scotland), Autism Europe, The National Autistic Society, September 2016. 1 page
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- 595) H. Gunes and B. Schuller, "Dimensional and Continuous Analysis of Emotions for Multimedia Applications: a Tutorial Overview," in *Proceedings of the 20th ACM International Conference on Multimedia, MM 2012*, (Nara, Japan), ACM, ACM, October 2012. 2 pages
- 596) M. Schröder, S. Pammi, H. Gunes, M. Pantic, M. Valstar, R. Cowie, G. McKeown, D. Heylen, M. ter Maat, F. Eyben, B. Schuller, M. Wöllmer, E. Bevacqua, C. Pelachaud, and E. de Sevin, "Come and Have an Emotional Workout with Sensitive Artificial Listeners!," in *Proceedings 9th IEEE International Conference on Automatic Face & Gesture Recognition and Workshops, FG 2011*, (Santa Barbara, CA), pp. 646–646,

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- 597) F. Eyben and B. Schuller, "Music Classification with the Munich openSMILE Toolkit," in *Proceedings Annual Meeting of the MIREX 2010 community as part of the 11th International Conference on Music Information Retrieval*, (Utrecht, Netherlands), ISMIR, ISMIR, August 2010. 2 pages (acceptance rate: 61 %)
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- Invited Papers (30):*
- 602) B. Schuller, M. Wöllmer, F. Eyben, G. Rigoll, and D. Arsić, "Semantic Speech Tagging: Towards Combined Analysis of Speaker Traits," in *Proceedings AES 42nd International Conference* (K. Brandenburg and M. Sandler, eds.), (Ilmenau, Germany), pp. 89–97, AES, Audio Engineering Society, July 2011. invited contribution
- 603) B. Schuller, S. Can, and H. Feussner, "Robust Key-Word Spotting in Field Noise for Open-Microphone Surgeon-Robot Interaction," in *Proceedings 5th Russian-Bavarian Conference on Bio-Medical Engineering, RBC-BME 2009*, (Munich, Germany), pp. 121–123, July 2009. invited contribution
- 604) B. Schuller, A. Lehmann, F. Weninger, F. Eyben, and G. Rigoll, "Blind Enhancement of the Rhythmic and Harmonic Sections by NMF: Does it help?," in *Proceedings International Conference on Acoustics including the 35th German Annual Conference on Acoustics, NAG/DAGA 2009*, (Rotterdam, The Netherlands), pp. 361–364, Acoustical Society of the Netherlands, DEGA, DEGA, March 2009. invited contribution
- 605) B. Schuller, "Speaker, Noise, and Acoustic Space Adaptation for Emotion Recognition in the Automotive Environment," in *Proceedings 8th ITG Conference on Speech Communication*, vol. 211 of *ITG-Fachbericht*, (Aachen, Germany), ITG, VDE-Verlag, October 2008. invited contribution, 4 pages
- 606) B. Schuller, M. Wöllmer, T. Moosmayr, and G. Rigoll, "Robust Spelling and Digit Recognition in the Car: Switching Models and Their Like," in *Proceedings 34. Jahrestagung für Akustik, DAGA 2008*, (Dresden, Germany), pp. 847–848, DEGA, DEGA, March 2008. invited contribution, Structured Session Sprachakustik im Kraftfahrzeug
- 607) B. Schuller, F. Eyben, and G. Rigoll, "Beat-Synchronous Data-driven Automatic Chord Labeling," in *Proceedings 34. Jahrestagung für Akustik, DAGA 2008*, (Dresden, Germany), pp. 555–556, DEGA, DEGA, March 2008. invited contribution, Structured Session Music Processing
- 608) B. Schuller, S. Can, C. Scheuermann, H. Feussner, and G. Rigoll, "Robust Speech Recognition for Human-Robot Interaction in Minimal Invasive Surgery," in *Proceedings 4th Russian-Bavarian Conference on Bio-Medical Engineering, RBC-BME 2008*, (Zelenograd, Russia), pp. 197–201, July 2008. invited contribution
- 609) B. Schuller, R. Müller, B. Hörnler, A. Höthker, H. Konosu, and G. Rigoll, "Audiovisual Recognition of Spontaneous Interest within Conversations," in *Proceedings 9th ACM International Conference on Multimodal Interfaces, ICMI 2007*, (Nagoya, Japan), pp. 30–37, ACM, ACM, November 2007. invited contribution, Special Session on Multimodal Analysis of Human Spontaneous Behaviour (acceptance rate: 56 %, IF\* 1.77 (2010))
- 610) B. Schuller, G. Rigoll, M. Grimm, K. Kroschel, T. Moosmayr, and G. Ruske, "Effects of In-Car Noise-Conditions on the Recognition of Emotion within Speech," in *Proceedings 33. Jahrestagung für Akustik, DAGA 2007*, (Stuttgart, Germany), pp. 305–306, DEGA, DEGA, March 2007. invited contribution, Structured Session Sprachakustik im Kraftfahrzeug
- 611) B. Schuller, J. Stadermann, and G. Rigoll, "Affect-Robust Speech Recognition by Dynamic Emotional Adaptation," in *Proceedings 3rd International Conference on Speech Prosody, SP 2006*, (Dresden, Germany), ISCA, ISCA, May 2006. invited contribution, Special Session Prosody in Automatic Speech Recognition, 4 pages
- 612) B. Schuller, M. Lang, and G. Rigoll, "Recognition of Spontaneous Emotions by Speech within Automotive Environment," in *Proceedings 32. Jahrestagung für Akustik, DAGA 2006*, (Braunschweig, Germany), pp. 57–58, DEGA, DEGA, March 2006. invited contribution, Structured Session Sprachakustik im Kraftfahrzeug
- 613) B. Schuller and G. Rigoll, "Self-learning Acoustic Feature Generation and Selection for the Discrimination of Musical Signals," in *Proceedings 32. Jahrestagung für Akustik, DAGA 2006*, (Braunschweig, Germany), pp. 285–286, DEGA, DEGA, March 2006. invited contribution, Structured Session Music Processing
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- 615) B. Schuller, M. Lang, and G. Rigoll, "Robust Acoustic Speech Emotion Recognition by Ensembles of Classifiers," in *Proceedings 31. Jahrestagung für Akustik, DAGA 2005*, (Munich, Germany), pp. 329–330, DEGA, DEGA, March 2005. invited contribution, Structured Session Automatische Spracherkennung in gestörter Umgebung
- 616) B. Schuller, G. Rigoll, and M. Lang, "Matching Monophonic Audio Clips to Polyphonic Recordings," in *Proceedings 31. Jahrestagung für Akustik, DAGA 2005*, (Munich, Germany), pp. 299–300, DEGA, DEGA, March 2005. invited contribution, Structured Session Music Processing
- 617) Z. Zhang, F. Weninger, and B. Schuller, "Towards Automatic Intonation Detection from Speech in Real-Life Acoustic Environments," in *Proceedings of Speech Communication; 10. ITG Symposium* (T. Fingscheidt and W. Kellermann, eds.), (Braunschweig, Germany), pp. 1–4, ITG, IEEE, September 2012. invited contribution
- 618) C. Joder and B. Schuller, "Exploring Nonnegative Matrix Factorisation for Audio Classification: Application to Speaker Recognition," in *Proceedings of Speech Communication; 10. ITG Symposium* (T. Fingscheidt and W. Kellermann, eds.), (Braunschweig, Germany), pp. 1–4, ITG, IEEE, September 2012. invited contribution
- 619) J. Deng, W. Han, and B. Schuller, "Confidence Measures for Speech Emotion Recognition: a Start," in *Proceedings of Speech Communication; 10. ITG Symposium* (T. Fingscheidt and W. Kellermann, eds.), (Braunschweig, Germany), pp. 1–4,

- ITG, IEEE, September 2012. invited contribution
- 620) M. Wöllmer, M. Kaiser, F. Eyben, F. Weninger, B. Schuller, and G. Rigoll, "Fully Automatic Audiovisual Emotion Recognition – Voice, Words, and the Face," in *Proceedings of Speech Communication; 10. ITG Symposium* (T. Fingscheidt and W. Kellermann, eds.), (Braunschweig, Germany), pp. 1–4, ITG, IEEE, September 2012. invited contribution
- 621) F. Weninger, M. Wöllmer, and B. Schuller, "Sparse, Hierarchical and Semi-Supervised Base Learning for Monaural Enhancement of Conversational Speech," in *Proceedings 10th ITG Conference on Speech Communication* (T. Fingscheidt and W. Kellermann, eds.), (Braunschweig, Germany), pp. 1–4, ITG, IEEE, September 2012. invited contribution
- 622) W. Han, Z. Zhang, J. Deng, M. Wöllmer, F. Weninger, and B. Schuller, "Towards Distributed Recognition of Emotion in Speech," in *Proceedings 5th International Symposium on Communications, Control, and Signal Processing, ISCCSP 2012*, (Rome, Italy), pp. 1–4, IEEE, IEEE, May 2012. invited contribution, Special Session Interactive Behaviour Analysis
- 623) F. Weninger and B. Schuller, "Fusing Utterance-Level Classifiers for Robust Intoxication Recognition from Speech," in *Proceedings MMCogEmS 2011 Workshop (Inferring Cognitive and Emotional States from Multimodal Measures)*, held in conjunction with the 13th International Conference on Multimodal Interaction, ICMI 2011, (Alicante, Spain), ACM, ACM, November 2011. invited contribution, 2 pages (acceptance rate: 39%, IF\* 1.77 (2010))
- 624) F. Weninger, B. Schuller, C. Liem, F. Kurth, and A. Hanjalic, "Music Information Retrieval: An Inspirational Guide to Transfer from Related Disciplines," in *Multimodal Music Processing* (M. Müller and M. Goto, eds.), vol. Seminar 11041 of *Dagstuhl Follow-Ups*, (Schloss Dagstuhl, Germany), pp. 195–215, 2012. invited contribution
- 625) M. Wöllmer, N. Klebert, and B. Schuller, "Switching Linear Dynamic Models for Recognition of Emotionally Colored and Noisy Speech," in *Proceedings 9th ITG Conference on Speech Communication*, vol. 225 of *ITG-Fachbericht*, (Bochum, Germany), ITG, VDE-Verlag, October 2010. invited contribution, Special Session Bayesian Methods for Speech Enhancement and Recognition, 4 pages
- 626) L. Devillers and B. Schuller, "The Essential Role of Language Resources for the Future of Affective Computing Systems: A Recognition Perspective," in *Proceedings 2nd European Language Resources and Technologies Forum: Language Resources of the future – the future of Language Resources*, (Barcelona, Spain), FLReNet, February 2010. invited contribution, 2 pages
- 627) S. Steidl, B. Schuller, D. Seppi, and A. Batliner, "The Hinterland of Emotions: Facing the Open-Microphone Challenge," in *Proceedings 3rd International Conference on Affective Computing and Intelligent Interaction and Workshops, ACII 2009*, vol. I, (Amsterdam, The Netherlands), pp. 690–697, HUMAINE Association, IEEE, September 2009. invited contribution, Special Session Recognition of Non-Prototypical Emotion from Speech – The final frontier?
- 628) P. Baggia, F. Burkhardt, C. Pelachaud, C. Peter, B. Schuller, I. Wilson, and E. Zovato, "Elements of an EmotionML 1.0," tech. rep., W3C, November 2008
- 629) A. Batliner, D. Seppi, B. Schuller, S. Steidl, T. Vogt, J. Wagner, L. Devillers, L. Vidrascu, N. Amir, and V. Aharonson, "Patterns, Prototypes, Performance," in *Pattern Recognition in Medical and Health Engineering, Proceedings HSS-Cooperation Seminar Ingenieurwissenschaftliche Beiträge für ein leistungsfähigeres Gesundheitssystem* (J. Hornegger, K. Höller, P. Ritt, A. Borsdorf, and H.-P. Niedermeier, eds.), (Wildbad Kreuth, Germany), pp. 85–86, July 2008. invited contribution
- 630) M. Grimm, K. Kroschel, B. Schuller, G. Rigoll, and T. Moosmayr, "Acoustic Emotion Recognition in Car Environment Using a 3D Emotion Space Approach," in *Proceedings 33. Jahrestagung für Akustik, DAGA 2007*, (Stuttgart, Germany), pp. 313–314, DEGA, DEGA, March 2007. invited contribution, Structured Session Session Sprachakustik im Kraftfahrzeug
- 631) G. Rigoll, R. Müller, and B. Schuller, "Speech Emotion Recognition Exploiting Acoustic and Linguistic Information Sources," in *Proceedings 10th International Conference Speech and Computer, SPECOM 2005* (G. Kokkinakis, ed.), vol. 1, (Patras, Greece), pp. 61–67, October 2005. invited contribution

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- 632) B. Schuller, "A decade of encouraging speech processing "outside of the box" - a Foreword.," in *Recent Advances in Nonlinear Speech Processing – 7th International Conference, NOLISP 2015, Vietri sul Mare, Italy, May 18–19, 2015, Proceedings* (A. Esposito, M. Faundez-Zanuy, A. M. Esposito, G. Cordasco, T. Drugman, J. Sol-Casals, and C. F. Morabito, eds.), vol. 48, Smart Innovation, Systems and Technologies of Smart Innovation Systems and Technologies, pp. 3–4, Springer, 2015. invited
- 633) R. Cowie, Q. Ji, J. Tao, J. Gratch, and B. Schuller, "Foreword ACII 2015 – Affective Computing and Intelligent Interaction at Xi'an," in *Proc. 6th biannual Conference on Affective Computing and Intelligent Interaction (ACII 2015)*, (Xi'an, P. R. China), AAC, IEEE, September 2015. 2 pages
- 634) B. Schuller, "Foreword," in *Sentic Computing – A Common-Sense-Based Framework for Concept-Level Sentiment Analysis* (E. Cambria and A. Hussain, eds.), pp. v–vi, Springer, 2 ed., 2015. invited foreword
- 635) B. Schuller, "Supervisor's Foreword," in *Real-time Speech and Music Classification by Large Audio Feature Space Extraction* (F. Eyben, ed.), Springer, 2015. invited foreword, 2 pages

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- 636) F. Eyben and B. Schuller, "openSMILE:) The Munich Open-Source Large-Scale Multimedia Feature Extractor," *ACM SIGMM Records*, vol. 6, December 2014
- 637) B. Schuller, S. Steidl, and A. Batliner, "The INTERSPEECH 2013 Computational Paralinguistics Challenge – A Brief Review," *Speech and Language Processing Technical Committee (SLTC) Newsletter*, November 2013
- 638) B. Schuller, S. Steidl, A. Batliner, F. Schiel, and J. Krajewski, "The INTERSPEECH 2011 Speaker State Challenge – A review," *Speech and Language Processing Technical Committee (SLTC) Newsletter*, February 2012
- 639) B. Schuller and L. Devillers, "Emotion 2010 - On Recent Corpora for Research on Emotion and Affect," *ELRA Newsletter, LREC 2010 Special Issue*, vol. 15, no. 1–2, pp. 18–18, 2010
- 640) B. Schuller, S. Steidl, A. Batliner, and F. Jurcicek, "The INTERSPEECH 2009 Emotion Challenge – Results and Lessons Learnt," *Speech and Language Processing Technical Committee (SLTC) Newsletter*, October 2009

#### Technical Reports (9):

- 641) D. L. Tran, R. Walecki, O. Rudovic, S. Eleftheriadis, B. Schuller, and M. Pantic, "DeepCoder: Semi-parametric Variational Autoencoders for Facial Action Unit Intensity Estimation," *arxiv.org*, April 2017. 11 pages
- 642) P. Tzirakis, G. Trigeorgis, M. A. Nicolaou, B. Schuller, and S. Zafeiriou, "End-to-End Multimodal Emotion Recognition using Deep Neural Networks," *arxiv.org*, April 2017. 9 pages
- 643) G. Keren and B. Schuller, "Convolutional RNN: an Enhanced Model for Extracting Features from Sequential Data," *arxiv.org*, February 2016. 8 pages
- 644) G. Keren, S. Sabato, and B. Schuller, "Tunable Sensitivity to Large Errors in Neural Network Training," *arxiv.org*, November 2016. 10 pages

- 645) M. Schmitt and B. Schuller, “openXBOW – Introducing the Passau Open-Source Crossmodal Bag-of-Words Toolkit,” *arxiv.org*, May 2016. 9 pages
- 646) I. Abdić, L. Fridman, E. Marchi, D. E. Brown, W. Angell, B. Reimer, and B. Schuller, “Detecting Road Surface Wetness from Audio: A Deep Learning Approach,” *arxiv.org*, December 2015. 5 pages
- 647) A. E.-D. Mousa, E. Marchi, and B. Schuller, “The IC-STM+TUM+UP Approach to the 3rd CHIME Challenge: Single-Channel LSTM Speech Enhancement with Multi-Channel Correlation Shaping Dereverberation and LSTM Language Models,” *arxiv.org*, October 2015. 9 pages
- 648) G. Trigeorgis, K. Bousmalis, S. Zafeiriou, and B. Schuller, “A deep matrix factorization method for learning attribute representations,” *arxiv.org*, September 2015. 15 pages
- 649) F. Weninger, B. Schuller, F. Eyben, M. Wöllmer, and G. Rigoll, “A Broadcast News Corpus for Evaluation and Tuning of German LVCSR Systems,” *arxiv.org*, December 2014. 4 pages