

INC 2018-2019 Publications

Journal Articles

1. Adam KCS, deBettencourt MT. Fluctuations of Attention and Working Memory. *Journal of cognition*. 2019;2(1). PubMed PMID: 31440739; PubMed Central PMCID: PMC6696791; DOI: 10.5334/joc.70.
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3. Artoni F, Delorme A, Makeig S. "Applying dimension reduction to EEG data by Principal Component Analysis reduces the quality of its subsequent Independent Component decomposition." *NeuroImage* 175:176-187, 2018.
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11. Castagnola E, Vahidi NW, Nimbalkar S, Rudraraju S, Thielk M, Zucchini E, Cea C, Carli S, Gentner TQ, Ricci D, Fadiga L, Kassegne S. *In Vivo* Dopamine Detection and Single Unit Recordings Using Intracortical Glassy Carbon Microelectrode Arrays. *MRS advances.* 2018 January 23;3(29):1629-1634. PubMed PMID: 29881642; PubMed Central PMCID: PMC5987773.
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Qualitative and quantitative 10-week long diary assessment. *Journal of Behavioral Addictions*. 7(2), pp. 433–444 (2018) DOI: 10.1556/2006.7.2018.33

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107. Zhang TY, Keown CL, Wen X, Li J, Vousden DA, Anacker C, Bhattacharyya U, Ryan R, Diorio J, O'Toole N, Lerch JP, Mukamel EA, Meaney MJ. Environmental enrichment increases transcriptional and epigenetic differentiation between mouse dorsal and ventral dentate gyrus. *Nature communications*. 2018 January 19;9(1):298. PubMed PMID: 29352183; PubMed Central PMCID: PMC5775256.

Books Chapters

1. Iversen, J.R., Makeig, S.D. (2019) MEG/EEG Data Analysis Using EEGLAB. In: Supek S, Aine CJ (eds) *Magnetoencephalography*, 2nd edition. Springer-Verlag, Berlin. Role: Primary author; updated the chapter for the second edition
2. Nakanishi, M., Wang, Y., & Jung, T-P., (2018) "Spatial filtering techniques for improving template-based SSVEP detection", in Tanaka, T., and Mahnaz, A. (Eds.): *Signal Processing and Machine Learning for Brain-Computer Interfaces*, Institute of Engineering and Technology, 219-242.

Abstracts

1. Castiglione, A., Wagner, J., Anderson, M. C., Aron, A. (2018) Preventing a thought from coming to mind elicits increased right frontal beta just as stopping action does. *Society for Neuroscience annual meeting, San Diego, USA*
2. Deiss, S. (2018) Neonatal synesthesia, pattern recognition, memory coding and conscious cognition. *The 26th Science of Consciousness Conference*, Interlaken, Switzerland
3. Gola, M.*, Wagner, J.*, Onton, J., Murphy, K., Makeig, S. (2018) Identifying distinct alpha band oscillatory dynamics in the EEG as targets for rhythmic transcranial magnetic stimulation (rTMS) *Society for Neuroscience annual meeting, San Diego, USA*
4. Hsu, SH., Nakanishi, M., Chang, CY. & Jung, TP. (2019), "Modeling EEG dynamics of self-imagery emotion: A pilot study", 9th IEEE EMBS Neural Engineering Conference, San Francisco, CA.
5. Iversen, J.R. (2018) "Rhythms in music and brain." 3rd International Mobile Brain/Body Imaging Conference, Berlin, Germany.

6. Kanoga, S., Nakanishi, M., Murai, A., Tada, M. & Kanemura, A. (2019), "Practicability of detecting steady-state visual evoked potentials contaminated by intensity-manipulated muscular artifacts", 41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society.
7. Sundby, K., Wagner, J., Aron, A. (2018) *Withholding an action during heat pain invokes brain signatures of motor suppression and conflict: Dissecting the components of urge*. Society for Neuroscience annual meeting, San Diego, USA
8. Tanji, Y., Nakanishi, M. & Tanaka, T. (2019), "Hybrid waveform, frequency, and phase coding for brain-computer interfaces based on steady-state visual evoked potentials", 9th IEEE EMBS Neural Engineering Conference, San Francisco, CA.
9. Wagner, J., Martinez-Cancino, R., & Müller-Putz, G.R. Makeig, S. (2018) Error-related brain dynamics predict step adaptation in a challenging gait task. *Society for Neuroscience annual meeting, San Diego, USA*
10. Wagner, J., Martinez-Cancino, R., & Müller-Putz, G.R. Makeig, S. (2018) Error-related brain dynamics predict step adaptation in a challenging gait task. *3rd International Mobile Brain/Body Imaging Conference, Berlin, Germany*

Conference proceedings

1. Chan, WH., Chiang, KJ., Nakanishi, M., Wang, YT. & Jung, TP. (2018) "Evaluating the performance of non-hair SSVEP-based BCIs featuring template-based decoding methods", in Proceedings of 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, pp.1972-1975.
2. Chang, C. Y.* , Hsu, S.-H.* , Pion-Tonachini, L., and Jung, T. P., "Evaluating Artifact Subspace Reconstruction for Automatic Artifact Removal." *IEEE EMBC*, 2018.
3. Chiang, K-J., Wei, C-S, Nakanishi, M., Jung, T-P., "Cross-Subject Transfer Learning Improves the Practicality of Real-World Applications of Brain-Computer Interfaces," *Proceedings of the 9th International IEEE EMBS Neural Engineering Conference*, 2019.
4. Dehais, F., Rida, I., Roy, R., Iversen, J.R., Mullen, T., Callan, D. (2019) A pBCI to predict attentional error before it happens in real flight conditions. *IEEE International Conference on Systems, Man and Cybernetics*.

5. Efrati, Y., & Gola, M. (2019, June). Adolescents compulsive sexual behavior-Family systemic approach. 6th International Conference on Behavioral Addictions, Yokohama, Japan.
6. Fairchild GT, Marini F, & Snow JC. (2019). The stronger EEG signature of motor preparation for real objects versus images is modulated by graspability. Society for Neuroscience (October 18-23).
7. Fairchild GT, Marini F, Breeding KA, & Snow JC. . (2018). Is the stronger EEG signature for real objects versus images modulated by graspability? Optical Society Vision Meeting (September 20-23).
8. Gehrke, L., Iversen, J. R., Makeig. S., Gramann, K. "The Invisible Maze Task (IMT): Interactive Exploration of Sparse Virtual Environments to Investigate Action-Driven Formation of Spatial Representations," Presented at *Spatial Cognition 2018. Reporting behavioral results of human 'visuo-maze' EEG and motion capture experiments conducted in a collaboration between SCCN and Technical University Berlin.*
9. Gola, M., Draps, M., Sescousse, G., Marchewka, A., Matuszewski, J., Duda, A. (2019). Gray matter volume abnormalities in compulsive sexual behavior, gambling and alcohol use disorder. 6th International Conference on Behavioral Addictions, Yokohama, Japan.
10. Gola, M., Lew-Starowicz, M., Draps, M., Kowalewska, E. (2019). Comparison of effects of pharmacological and psychological treatment of CSBD. 6th International Conference on Behavioral Addictions, Yokohama, Japan.
11. Grubbs, JB., Gola, M. (2019). Pornography use, Self-Reported Addiction, and Erectile Functioning: Results from Nationally Representative and Longitudinal Data-Sets. 6th International Conference on Behavioral Addictions, Yokohama, Japan.
12. Hsu S-H, Wu Y C, and Jung T-P. (2018) Exploring Mental State Changes during Hypnotherapy using Adaptive Mixture Independent Component Analysis. *The Seventh International BCI Meeting*. Pacific Grove, California.
13. Hsu S-H, Zi Y, Wu Y C, Jackson P, and Jung T-P. (2018) Exploring Mental State Changes during Hypnotherapy using Adaptive Mixture Independent Component Analysis of EEG, *IEEE Biomedical Circuits and Systems*. Cleveland, Ohio.

14. Kambara, H., Miyakoshi, M., Tanaka, H., Kagawa, T., Yoshimura, N., Koike, Y., Makeig, S. "Analysis of 3-ball juggling performance and brain dynamics." Presented at *Japanese Neural Network Society*, 2019. *This report on experiments conducted at SCCN won a prize for best paper.*
15. Kanoga, S., Nakanishi, M., Murai, A., Tada, M. & Kanemura, A. (2018) "Semi-simulation experiments for quantifying the performance of SSVEP-based BCI after reducing artifacts from trapezius muscles", in Proceedings of 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, pp.4824-4827.
16. Khalil A, Wu Y C, Iversen J. (2018) Studying Auditory Processing in Group Contexts with Low-Density, Wireless EEG. *Society for Neuroscience*. San Diego, California.
17. Kim, R., Li, Y., Sejnowski, T.J. Simple framework for constructing functional spiking recurrent neural networks. (2019) Proceedings of the National Academy of Sciences of the United States of America. DOI: 10.1073/pnas.1905926116
18. Kowalewska, E., Hamerska, U., Potenza, M.N., Gola, M. (2019). Relation between erectile dysfunctions and pornography use-analysis of large set of self-reported data. 6th International Conference on Behavioral Addictions, Yokohama, Japan.
19. Lega, C., Ferrante, O., Santandrea, E., Marini, F., Cattaneo, L., & Chelazzi, L. . (2018). Probing the neural mechanisms for distractor filtering and their history-contingent modulation by means of TMS. Society for Neuroscience (November 3-7).
20. Miyakoshi, M., Tung, K., Lloyd, E., Makeig, S., Loo, S., "EEG study on chronic tic disorder patients" *Neuroscience 2018*.
21. Nakanishi, M., Wang, YT. & Jung, TP (2018), "Optimizing phase intervals for phase-coded SSVEP-based BCIs with template-based algorithm", in Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics, pp.650-655.
22. Nakanishi, M., Wang, YT. & Jung, TP (2018), "Transferring shared responses across electrode montages for facilitating calibration in high-speed brain spellers" in Proceedings of 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, pp.89-92.
23. Nawa, N.E., Callan, D.E., Mokhtari, P., Ando, H., Iversen, J.R. (2018) Decoding music-induced experienced emotions using functional magnetic resonance imaging - Preliminary results.

Proceedings International Joint Conference on Neural Networks (IJCNN). IEEE.
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24. Nguyen L, Shende SA, Marini F, Llano DA, & Mudar R. (2019). Theta, alpha, and beta band oscillations related to value-directed strategic processing in cognitively normal younger and older adults. Society for Neuroscience (October 18-23).
25. Pion-Tonachini, L., Hsu, S., Chang, C., Jung, T.P., and Makeig, S., "Online Automatic Artifact Rejection using the Real-time EEG Source-mapping Toolbox (REST)," *2018 40th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Honolulu, HI, 2018, pp. 106-109.
26. Pion-Tonachini, L., Hsu, S.-H., Chang, C. Y. , Jung, T. P., and Makeig, S., "Automatic Artifact Rejection using the Real-time EEG Source-mapping Toolbox (REST)." *IEEE EMBC, 2018*
27. Raj S, Tsai B, Schperberg A, Brown S, Jung T-P, Wu Y C. (2018) Resting State Brain Dynamics Supporting Creativity. *Society for Neuroscience*. San Diego, California.
28. Raj S. and Wu Y C. (2019) Resting State Brain Dynamics Supporting Creativity. *Society for Neuroscience of Creativity*. San Francisco, California.
29. Ross, J. M., Iversen, J. R., Makeig, S., & Balasubramaniam, R. Covert motor activity and auditory rhythm perception." Presented at *New England Sequencing and Timing (NEST)*, Storrs, Connecticut, USA, 2019.
30. Siddharth, S., Jung, T.-P., Sejnowski, T. J., Multi-modal Approach for Affective Computing. International Conference of IEEE Engineering in Medicine and Biology Society, July 17-21 (2018).
31. Van, L-D., Lu, T-C., Jung, T-P., Wang, J-F., "Hardware-oriented Memory-limited Online Fastica Algorithm and Hardware Architecture for Signal Separation," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2019.
32. Wei, C.-S., Nakanishi, M., Chiang, K.-J., and Jung, T.-P., "Exploring Human Variability in Steady-State Visual Evoked Potentials," *IEEE SMC 2018*, 2018.
33. Wei, CS., Nakanishi, M., Chiang, KJ. & Jung, TP. (2018), "Exploring variability in steady-state visual evoked potentials towards high speed BCI speller", in Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics, pp.474-479.

34. Wu Y C and Jung T-P. (2019) Multi-modal Approaches to Studying Problem Solving in a 3D Environment. *NIH Brain Meeting*. Washington D. C.
35. Yu, T., Wei, CS., Chiang, KJ., Nakanishi, M., & Jung, TP. (2019), "EEG-based user authentication using a convolutional neural network", in Proceedings of the 9th IEEE EMBS Neural Engineering Conference, pp.1011-1014.

Invited Talks

John Iversen

1. Iversen, J.R., Invited talk, "Audiomotor interactions in beat perception," Computational Neuroscience Society, Seattle, WA, July 2018.
2. Iversen, J.R., Invited talk, "Embodied cognition of music," American Psychological Association, San Francisco, CA, August 2018.
3. Iversen, J.R., Keynote and policy discussion " Music, language and the developing brain," Trinity College London VII Language Education Forum, Madrid, Spain, October 2018.4.
4. Iversen, J.R., Invited talk, "Emerging EEG technologies for studying brain and behavior in real time," Creativity and Cognition, UCLA, April 2019.
5. Iversen, J.R., Invited talk, "Update on the SIMPHONY project," Viva Música Community Event, Chula Vista, CA, May 2019.
6. Iversen, J.R., Invited talk, "Music and the Child's Brain," National Endowment for the Arts, Washington, DC, June 2019.

T.P. Jung

1. Jung, T.P., Invited talk, "Neural Lab for Experimental Architecture and Design," New School for Architecture and Design, San Diego, CA., August 12, 2018.
2. Jung, T.P., Invited talk, "Neural Lab for Experimental Architecture and Design," New School for Architecture and Design, San Diego, CA., August 12, 2018.
3. Jung, T.P., Invited talk, "Developing a Multi-modal Bio-Sensing and Activity Tagging Platform for MoBI Research," The 3rd International Mobile Brain/Body Imaging Conference, Berlin, Germany, July 12, 2018.

4. Jung, T.P., Invited talk, "Real-world Neuroimaging," University of Technology Sydney, Sydney, Australia, September 4, 2018.
5. Jung, T.P., Invited talk, "Multi-modal Real-world neuroimaging," College of Computer Science, National Chiao Tung University, Hsinchu, Taiwan, September 17, 2018.
6. Jung, T.P., Invited talk, "Big and Crucial Issues in BCIs, Tianjin BCI Workshop, Tianjin, China, October 26, 2018.
7. Jung, T.P., Invited talk, "Real-world Neuroimaging," Yanshan University, Qinhuangdao, China, October 29, 2018.
8. Jung, T.P., Invited talk, in a plenary session, "Neural and Physiological Correlates of Task Performance in Naturalistic Environments," IEEE EMBS Neural Engineering Research (NER), San Francisco, CA, Mar. 20-23, 2019.
9. Jung, T.P., Invited talk, National Chiao Tung University, Hsinchu, Taiwan, May 11, 2019
10. Jung, T.P., Invited talk, "Big and Crucial Issues in BCIs," Zhejiang University, Hangzhou, China, May 20, 2019
11. Jung, T.P., Invited talk, "Tackling Big and Crucial Issues in BCIs: An Update," Tianjin BCI Workshop, Tianjin, China, June 16, 2019.
12. Jung, T.P., Keynote speech, "Big and Crucial Issues in BCIs," Human-Computer Fusion and Artificial Intelligence Symposium, Nanjing, China, August 30, 2018.
13. Jung, T.P., Keynote speech, "Using Machine Learning and Neurophysiological Measurement to Better Understand the Human Brain in Real and Virtual Environments," Intelligent Medicine and Rehabilitation, Shanghai, China, May 18, 2019.
14. Jung, T.P., Keynote speech, IEEE International Conference on Computational Intelligence and Virtual Environments for Measurement Systems and Applications (CIVEMSA), Tianjin, China, June 14-15, 2019
15. Jung, T.P., Keynote speech, "Brain-computer Interfaces for Sustaining Healthy and Independent Living," Taipei, Taiwan, June 19-22, 2019.

Scott Makeig

1. Makeig, S., Invited keynote, "Mobile Brain/Body Imaging: A decade of emergence," *Fourth International Workshop on Mobile Brain/Body Imaging*, Berlin, Germany, July 14, 2018.
2. Makeig, S., Keynotes, "Mining event-related brain dynamics I & II", *27th EEGLAB Workshop*, University of Pittsburgh, Pennsylvania, September 4 & 5, 2018.
3. Makeig, S., Keynotes, "Mining event-related brain dynamics I & II", *28th EEGLAB Workshop*, University of California San Diego, La Jolla California, November 9 & 12, 2018.
4. Makeig, S., Invited talk, "Mobile Brain/Body Imaging: Imaging Natural Cognition," National Chiao Tung University, Honshiu, Taiwan, January 24, 2019.
5. Makeig, S., Invited keynote, "Imaging human consciousness: knowing, feeling, and willing." *Taiwan Cognitive Neuroscience Society*, Taiwan, January 25, 2019.
6. Makeig, S., Invited keynote, "American Society of Neurophysiological Monitoring (ASNM), Chicago, Illinois, May 4, 2019.
7. Makeig, S., Invited attendance and presentation, "Global Brain Consortium" planning meeting, Montreal Neurological Institute, Montreal, Quebec, Canada, May 7-8, 2019.
8. Makeig, S., Invited moderator and talk, *Symposium on the Brain Imaging Data Standard (BIDS) for EEG data*, CRNS Toulouse, France, June 27, 2019.
9. Makeig, S., Keynotes, "Mining event-related brain dynamics I & II", *29th EEGLAB Workshop*, Aspet, France, June 18-21, 2019.

Other Presentations:

Scott Makeig

On-site P-41 project review panel, National Institute for Biomedical Imaging and Bioengineering, Albany NY, March 6-7, 2019.

Review presentation on SCCN history and research, INC development review meeting, UCSD, April 2, 2019.

Combined efforts with former PhD student Tim Mullen to organize a first UCSD Hands-on Workshop on the Lab Streaming Layer software framework build by programmer/analyst Christian Kothe for SCCN, which is now being used worldwide with a community of users, developers, and commercial partners. UCSD, November 8, 2018.

John Iversen

Interviewed for Spanish Press: "El poder de la música para el cerebro infantil" Hacer Familia, Madrid (November 22, 2018)(<https://www.hacerfamilia.com/videos/video-poder-musica-cerebro-infantil-20181122133737.html>)

Filmed for PBS series "Closer to Truth: Breakthroughs!" TV episode on music, evolution and the brain. (March 27, 2019). Closer to Truth is a "public television series ... that explores fundamental questions and features leading scientists and philosophers." To air in 2020 season. (<https://www.closetotruth.com/>)