Xiaoshuang Wang

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Personal

Male, born in 1991, Chinese citizen.

Education

03/2019 - present: Ph.D. candidate, Software and Communications Engineering, Faculty of Information Technology, University of Jyväskylä, Finland.

09/2016 - 06/2018: M.S., Biomedical Engineering, School of Biomedical Engineering, Faculty of Electronic and Electrical Engineering, Dalian University of Technology, Dalian, China.

09/2012 - 06/2016: B.S., Automation, College of Automation and Electronic Engineering, Qingdao University of Science and Technology, China.

Research interests

Current research:
Epileptic seizure detection and prediction using scalp electroencephalogram (sEEG) and intracranial electroencephalogram (iEEG) based on deep learning and machine learning methods. Details:
1. Seizure detection and prediction
2. Deep learning (convolutional neural networks, etc.)
3. Marchine learning (SVM, KNN, etc.) and data mining (feature extraction, etc.)
4. EEG data analysis and signal processing (ICA, PCA, etc.)

Early research:
Event-related potentials (ERPs), including time domain analysis, time-frequency domain analysis, source localization and statistical analysis.

Programming

Matlab & Python

Publications

Papers as the first author

Wang, X., Zhang, G., Wang, Y., Yang, L., Liang, Z., & Cong, F. (2022). One-Dimensional Convolutional Neural Networks Combined with Channel Selection Strategy for Seizure Prediction Using Long-Term Intracranial EEG. *International journal of neural systems*, 32(02), 2150048. DOI: 10.1142/S0129065721500489

Wang, X., Wang, X., Liu, W., Chang, Z., Kärkkäinen, T., & Cong, F. (2021). One dimensional convolutional neural networks for seizure onset detection using long-term scalp and intracranial EEG. *Neurocomputing*, 459, 212-222. DOI: 10.1016/j.neucom.2021.06.048

Wang, X., Ristaniemi, T., & Cong, F. (2021, January). One and Two Dimensional Convolutional Neural Networks for Seizure Detection Using EEG Signals. In *2020 28th European Signal Processing Conference (EUSIPCO)* (pp. 1387-1391) IEEE. DOI: 10.23919/Eusipco47968.2020.9287640

Papers as a co-author

Gu, B., Wang, H., Beltrán, D., Liu, B., Liang, T., **Wang, X.**, & de Vega, M. (2021). Embodied processing of disgust in Mandarin words: An ERP study. *Journal of Neurolinguistics*, 58, 100981. DOI: 10.1016/j.jneuroling.2020.100981

Liu, B., Wang, H., Beltrán, D., Gu, B., Liang, T., **Wang, X.**, & de Vega, M. (2020). The generalizability of inhibition-related processes in the comprehension of linguistic negation. ERP evidence from the Mandarin language. *Language, Cognition and Neuroscience*, 35(7), 885-895. DOI: 10.1080/23273798.2019.1662460

Xia, X., Zhang, J., **Wang, X.**, & Wang, X. (2019). The approach behavior to angry words in athletes—A pilot study. *Frontiers in behavioral neuroscience*, 13, 117. DOI: 10.1016/j.neucom.2021.06.048

Wang, H., Li, J., **Wang, X.**, Jiang, M., Cong, F., & de Vega, M. (2019). Embodiment effect on the comprehension of Mandarin manual action language: An ERP study. doi: 10.1016/j.jneumeth.2019.108502

Papers under review

Wang, X., Zhang, C., Kärkkäinen T., Chang Z., & Cong, F. (2022). Channel Increment Strategy-Based 1D Convolutional Neural Networks for Seizure Prediction Using Intracranial EEG, submitted to *IEEE Transactions on Neural Systems and Rehabilitation Engineering*.

Wang, X., Kärkkäinen T., & Cong, F. (2022). Seizure Prediction Using EEG Channel Selection Method, submitted to *32nd IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2022)*.

Academic activities

28th European Signal Processing Conference (EUSIPCO 2020), January 18-22, 2021, Virtual Conference.

8th Annual Research Seminar of CIBR, December 11, 2020, Jyväskylä, Finland.

7th Annual Research Seminar of CIBR, December 11, 2019. Jyväskylä, Finland.

MEG Nord 2019, May 8-10, 2019, Jyväskylä, Finland.

Research funding

02/2019 - 02/2023, China Government Scholarship, from China Scholarship Council

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https://xiaoshuang-wang.github.io/