





Konstantinos Patlatzoglou, Ph.D.


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About

Computer scientist, interested in AI, neuroscience and biomedical engineering. My research experience has mainly focused on areas of neuroinformatics within the domains of music cognition and general anesthesia. Currently, I'd like to explore and develop machine learning methods for scientific discovery and clinical applications.





Experience

- 2017 – 2022  **University of Kent - Machine Learning Researcher**
Researched and developed deep learning-based EEG models for automated, end-to-end, real-time monitoring of the depth of anesthesia.
- Skills:** • Python (*Tensorflow*) • EEG Analysis (*MNE*) • Digital Signal Processing
• NeuroInformatics • Machine Learning/Deep Learning • Research Methods

Education

- 2017 – 2022  **Ph.D. in Computer Science** - University of Kent
Thesis title: *Deep Learning for Electrophysiological Investigation and Estimation of Anesthetic-Induced Unconsciousness.*
- 2015 – 2016  **M.Sc. in Sound and Music Computing** - Universitat Pompeu Fabra
Grade: 8.53/10
Thesis title: *Neural and Music Correlates of Music-Evoked Emotions.*
- 2010 – 2015  **B.Sc. in Informatics** - Aristotle University of Thessaloniki
Grade: 8.69/10 (First Class Honours)
Thesis title: *A study of causal interactions during music listening based on EEG signals using estimates of nonlinear correlations.*






Skills

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|---------------------|---|
| Languages |  Greek (<i>Native</i>), English (<i>Proficiency</i>) |
| Coding |  Python, Java, Matlab, C |
| ML Libraries |  Scikit-learn, Tensorflow, Keras |
| Misc. |  MS Office, \LaTeX , Unix Shell, Git, Slurm |




Activities and Interests

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|--------------------------|---------------------------------------|------------------------------------|
| • Biomedical Engineering | • Cognitive Science and Psychology | • Music Perception and Cognition |
| • Evolutionary Biology | • Massive Open Online Courses (MOOCs) | • Music Composition and Production |

Teaching

- 2017 – 2021  Introduction to Object-Oriented Programming
- 2017 – 2019  Advanced Object-Oriented Programming
- 2019 – 2021  Data Structures and Algorithms
- 2019 – 2020  Agile Development and Software Security
- 2018 – 2020  Computing Theory and Concurrent Programming

Research Publications

- 1 **Patlatzoglou, K.** (2022). *Deep learning for electrophysiological investigation and estimation of anesthetic-induced unconsciousness* (Doctoral dissertation, University of Kent,). Retrieved from  <https://kar.kent.ac.uk/97272/>
- 2 **Patlatzoglou, K.**, Chennu, S., Gosseries, O., Bonhomme, V., Wolff, A., & Laureys, S. (2020). Generalized Prediction of Unconsciousness during Propofol Anesthesia using 3D Convolutional Neural Networks. In *2020 42nd annual international conference of the IEEE Engineering in Medicine & Biology Society (EMBC)* (Vol. 2020-July, pp. 134–137).  doi:10.1109/EMBC44109.2020.9175324
- 3 **Patlatzoglou, K.**, Chennu, S., Boly, M., Noirhomme, Q., Bonhomme, V., Brichant, J.-F., ... Laureys, S. (2018). Deep Neural Networks for Automatic Classification of Anesthetic-Induced Unconsciousness. In *Lecture notes in computer science (including subseries lecture notes in artificial intelligence and lecture notes in bioinformatics)* (Vol. 11309 LNAI, pp. 216–225).  doi:10.1007/978-3-030-05587-5_21

Conferences and Workshops

- Sep 2020  Pattern Recognition in Neuroimaging (PRNI) Summer School, Vienna, Austria
- Jul 2020  42nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Montreal, Canada
Invited Talk: *Generalized Prediction of Unconsciousness during Propofol Anesthesia using 3D Convolutional Neural Networks*
- May 2020  Brain, Cognition, Emotion and Music (BCEM) Conference, Kent, UK
- Nov 2019  Studying Consciousness in the Electrical Brain - Luminous Workshop, Oxford, UK
Poster Presentation: *Classification and Regression Analysis of Anesthetic States using Electroencephalography and Deep Learning*
- Jul 2019  3rd International Summer School on Deep Learning, Warshaw, Poland
- Jun 2019  1st Interdisciplinary Research on Brain Network Dynamics (Brandy) Summer School, Terzolas, Italy
- Dec 2018  11th International Conference on Brain Informatics, Arlington, Texas
Invited Talk: *Deep Neural Networks for Automatic Classification of Anesthetic-Induced Unconsciousness*
- Sep 2018  Complex Systems Society (CCS) Conference, Thessaloniki, Greece
Invited Talk: *Classification Analysis of Levels of Consciousness under Anesthesia, using Electroencephalography and Deep Learning Techniques*
- Sep 2017  International Symposium on Performance Science (ISPS), Reykjavik, Iceland
Poster Presentation: *Neural and Music Correlates of Music-Evoked Emotions*