GIULIO DEGANO

PhD, MSc – Data scientist | Multimodal Time Signal Processing

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EXPERIENCE

Biomedical Engineer & Data Scientist

Hôpitaux universitaires de Genève

Jan 2024 – ongoing | Geneva, CH

- Design and implement **times series** pipelines, analyzing continuous multi-modal biological data streams (EEG, intracranial pressure, arterial pressure, oxygenation) in ICU settings.
- Developed a **CNN-based pattern recognition model** for automated EEG classification (published in Ann. Clinical and Translational Neuro).
- Built an **ML pipeline for clinical outcome prediction** in ICU patients, currently in final revision in the leading journal for critical care.

Senior Researcher – Computational Signal Processing & Tecnical Lead

University of Geneva

Jan 2021 – ongoing | Geneva, CH

- Designed and implemented ML models of varying complexity on large-scale datasets of brain activity (MEG, fMRI), using different *scikit-learn* classifiers depending on goals.
- Developed and optimized an **open-source software** for brain region segmentation, enabling fully automated analysis pipelines used by multiple research groups.
- Managed the developement of the research lines across a **multidisciplinary team** of five with heterogeneous background (computer scientists, neuroscientists, linguist).

PhD – Computational Signal Processing

University of Birmingham

Jan 2017 – Sept 2020 | Birmingham, UK

- Developed a novel **predictive model** using EEG time-series data for assessing patient recovery over 3- and 6-month horizons. Published in a high-impact journal (Annals of Neurology), significantly outperforming the clinical standard of care.
- Led three research projects end-to-end on time series data: **study design, data collection pipeline, ML analysis, and reporting**. Presented at a major international symposium (150+ attendees).

Data Science Competitions

Independent / Kaggle

May 2016 – Sept 2016 | Paris, FR

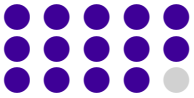
- **Led a data science team** to 5th place at the World Data Science Game 2016, receiving the Milliman Prize.
- Applied *CNNs* for image classification, *LightGBM* for tabular data, and *lightweight Transformers* for **time-series classification** tasks using Python.

CORE COMPETENCIES

Time-Series Analysis | Signal Processing | Data Management | Critical thinking | Machine Learning

LANGUAGES

English
Italian
French



PROGRAMMING

Python
Matlab
R
Java

TOOLS & FRAMEWORKS

PyTorch | scikit-learn | Hugging Face | MNE-Python | Nilearn | Pandas | NumPy | Git | Linux | HPC / Cluster Computing

EDUCATION

Ph.D. in Computational Neuroscience

University of Birmingham

Jan 2017 – Sept 2020

M.Sc. in Biomedical Engineering

University of Padova

Sept 2014 – Sept 2016

B.Sc. in Information Engineering

University of Padova

Sept 2010 – March 2014

PUBLICATIONS

Journal Articles Highlights

- Degano, G., Ferrari, A., & Noppeney, U. (2026). Feeling the music: Audiotactile encoding of temporal structure in the human brain. *bioRxiv*. doi:10.64898/2026.01.17.700057
- Degano, G., Xhepa, S., Francini, N., Rochat, T., Kleinschmidt, A., Quintard, H., & De Stefano, P. (2026). Eeg-based machine learning prognostication in comatose patients with indeterminate outcome after cardiac arrest. *under final round rev Critical Care*.
- De Stefano, P., Leitinger, M., Misirocchi, F., Quintard, H., Degano, G., & Trinka, E. E. (2025). Myoclonus after cardiac arrest: Need for standardization—a systematic review and research proposal on terminology. *Critical Care Medicine*, e410–e423.
- Degano, G., Donhauser, P., Williams, L., Merlo, P., & Golestani, N. (2025). Cortical signatures of the interaction between prosody and syntax during naturalistic speech listening. *Communications Biology*.
- Degano, G., Misirocchi, F., Rigoni, I., Kaplan, P. W., Quintard, H., Vulliémoz, S., … De Stefano, P. (2025). Electrophysiological signatures of alpha coma. *Journal of Clinical Neurophysiology*, *626–632*.
- Degano, G., Quintard, H., Kleinschmidt, A., Francini, N., Sarbu, O. E., & De Stefano, P. (2025). Icu-eeg pattern detection by a convolutional neural network. *Annals of Clinical and Translational Neurology*, *12*(11), 2295–2304.
- Sokoliuk, R., Degano, G., Banellis, L., Melloni, L., Hayton, T., Sturman, S., … Cruse, D. (2021). Covert speech comprehension predicts recovery from acute unresponsive states. *Annals of Neurology*, *89*(4), 646–656.
- Degano, G., Jones, S., & Noppeney, U. (2019). Ageing increases the impact of audiovisual synchrony on speech comprehension in adverse listening situations. *Proceedings of the 23rd International Congress on Acoustics, 4th EAA Euroregio 2019 : 9-13 September 2019 in Aachen, Germany*.
- McNeil, A., Degano, G., Poole, I., Houston, G., & Trucco, E. (2017). Comparison of automatic vessel segmentation techniques for whole body magnetic resonance angiography with limited ground truth data. *Medical Image Understanding and Analysis*, 144–155.

PRIZES AND GRANTS

HUG Private Foundation

CH

2025 Geneva, CH

- **Project:** Détection précoce du vasospasme par électroencéphalogramme (Won 200k CHF).

EIT Health Wild Card

EU

2021 Lausanne, CH

- Certificate of the 2021 EIT Health Wild Card programme.

Early Career Researcher Grant

Guarantors of the Brain

2019 UK

- Travel grant for international conference presentation on multisensory signal integration.

Milliman Prize

Data Science Game

2016 Paris, FR

- 5th place finish at the Data Science Game world championship.