

KONTRAS KONSTANTINOS



PROFESSIONAL & RESEARCH EXPERIENCE

- PostDoc Researcher, KU Leuven Stadius**, Leuven, Belgium 2025-ongoing
- PhD Researcher, KU Leuven Stadius**, Leuven, Belgium 2020-2025
- **Biomedical Multimodal:**
 - Introduced a state-of-the-art multimodal sleep staging model (IEEE TNSRE).
 - Evaluated several multimodal fusion strategies for performance and robustness.
 - Built a Python toolbox for biomedical signal preprocessing.
 - **Multimodal Competition:**
 - Developed a dynamic gradient-modulative, multi-loss objective for balanced multimodal training, achieving 2.8%–14.1% accuracy improvements across datasets (BMVC24).
 - Unified current SOTA multimodal training objectives into a single toolbox.
 - Pioneered a fusion-as-game training model for multimodal competition, the first to significantly surpass all previous SOTA and ensemble baselines by 0.5-4% accuracy (under review).
 - Led SVM course exercise sessions from the first year in the MSc of AI.
 - Supervised 7 Master's theses, some in collaboration with UZ-Leuven and UGhent.
- Software Engineer Intern, Oracle**, Athens, Greece 2018
- Consulted ERP applications using Oracle Suite.
- Research Assistant, LMS UPatras**, Patra, Greece 2017-2018
- Designed a multivariate monitoring system for fault detection of Comau robotic arms.

EDUCATION

- 🔗 **PhD, KU Leuven Stadius**, Leuven, Belgium 2020-2025
Supervisors: Prof. Maarten De Vos & Prof. Johan Suykens
- MSc in Artificial Intelligence (Magna Cum Laude), KU Leuven**, Leuven, Belgium 2019-2020
- 🔗 MSc Thesis: “Active learning for Segmentation with epistemic uncertainty by approx. Bayesian NN”
Relevant Coursework: Computer Vision, Uncertainty in DNN, SVM
- BSc & MEng in Electrical and Computer Engineering, UPatras**, Patra, Greece 2013-2018
- 🔗 MEng Thesis: “Verifacion: A decentralized face recognition login system”
MEng Specialization: Computer Engineering (Cum Laude)

PUBLICATIONS

- CoRe-Sleep: A Multimodal Fusion Framework for Time Series Robust to Imperfect Modalities.
K.Kontras, C. Chatzichristos, H. Phan, J. Suykens, M. De Vos **IEEE TSNRE 2024**
- Improving Multimodal learning with Multi-Loss Gradient Modulation
K.Kontras, C. Chatzichristos, M. Blaschko, M. De Vos **BMVC 2024 and soon extended in IJCV**
- Is there benefit in training multimodal models from scratch?
K.Kontras, C. Chatzichristos, M. Blaschko, M. De Vos **Preprint**
- Multimodal Competition Regularizer: A game-theoretic approach
K.Kontras, T. Strypsteen, C. Chatzichristos, P. Liang, M. Blaschko, M. De Vos **Preprint**

PUBLIC TALKS

- Seminar** talk on “Multimodal Competition”, KU Leuven 10.2024
- Panelist** at European Health Summit at the EU Parliament, “Showcases of the digital tech in the health sector” 03.2023
- Seminar** talk on “Self Supervised learning and its applications to EEG”, KU Leuven 04.2022

AWARDS ON PHD

- 🔗 **OxML 2023 Summer School Kaggle Challenge Winner** – Secured first place in Breast Cancer Biopsy Classification, demonstrating advanced and rapid model development.
- VSC Tier-1 Compute Grant** – Awarded €40,000 for the project “Tackling Multimodal Competition in Multimodal Supervised Deep Learning”, enabling expanded computational resources.