KONTRAS KONSTANTINOS

MACHINE LEARNING RESEARCHER

EDUCATION

PhD on Multimodal Fusion 2020-2024
KU Leuven, Leuven, Belgium
Supervisors: Prof. Maarten De Vos & Prof. Johan Suykens

MSc in Artificial Intelligence (Magna Cum Laude) 2019-2020
KU Leuven, Leuven, Belgium
Relevant Coursework: Computer Vision, Uncertainty in AI, SVM

Erasmus+ Exchange, Engineering Science Faculty 2017
Unicersity of Duisburg-Essen, Essen, Germany
Relevant Coursework: Distributive Algorithms, IoT

Diploma in Electrical and Computer Engineering 2013-2018
University of Patras, Patra, Greece
Specialization: Electronic and Computer Engineering
Relevant Coursework: Signal Processing, Robotics, Pattern Recog.

PROFESSIONAL EXPERIENCE

PhD, **KU Leuven**, Leuven, Belgium 2020-2024
Researching machine learning core systems with multiple inputs.
• Biomedical Timeseries (EEG, ECG) • Multimodal selection Framework
• Robustness on imperfect multimodal data • Uncertainty-driven fusion
Supervised Master Thesis and TA at MSc of AI in SVM course.

Software Engineer Intern, **Oracle**, Athens, Greece 03-06.2018
Consulted ERP applications using Oracle Suite.

Research Assistasnt, **LMS UPatras**, Patra, Greece 08-12.2017
Designed and deployed a multivariate T2 monitoring system and the data collection pipeline for fault detection of Comau robotic arms.

PROJECTS

Kidney Biopsy Image Segmentation
- Delivered an end-to-end medical supportive tool, from labelling to neural network design.
- Supervised a team of three to derive a research prototype.

MSc Thesis: "Modeling epistemic uncertainty by approx. Bayesian NN"
- Conceived a pixel-based Active Learning schema for image segmentation, part of the Toyota Lab (TRACE) research.
- Conducted vast experimentation on uncertainty quantification for regression, classification and segmentation tasks.
- Supervisor: Prof. L. Van Gool, KUL-ETH, Dr. M. Proesmans TRACE

BSc Thesis: "Verifacion: A decentralized face recognition login system"
- Employed a few-shot CNN for verification of facial identity.
- Developed an Ethereum DAPP with chrome extension UI to store the facial data as hashes and distribute CNN computations.
- Supervisor: Prof. E. Dermatas, UPatras

PROFILE

I aspire through my research to fill the gaps of Artificial Intelligence such as the systems ability to understand its own uncertainty, to explain its decisions and to process multiple different type of data (multimodal). As a PhD student researching AI algorithms for the biomedical sector, I am preparing myself for this greater challenge!

PUBLICATIONS

CoRe-Sleep: A Multimodal Fusion Framework for Time Series Robust to Imperfect Modalities.
K.Kontras et al. 2023

PUBLIC TALKS

Panelist at European Health Summit, "Showcases of the digital tech in the health sector" EU Parliament 03.2023

Seminar talk on "Self Supervised learning and its applications to EEG", KU Leuven, Leuven 04.2022

LANGUAGES

Greek: Native **English:** C2
German: B2 **Spanish:** B1

SKILLS

Programming: Python, C, C++, Java, Matlab, Prolog, JS, PHP, Solidarity

ML Libraries: PyTorch, Scikit-learn, OpenCV, Dlib, HugginFace Lib

Other Tools: MongoDB, SQL/MySQL AWS and Adobe suite

PERSONAL INTERESTS

- Song lyrics writing (non-published)
- Football & Running
- Travelling