Imen Ben Mahmoud

Research and Development engineer in Artificial Intelligence with a background in physics and expertise in machine learning



CONTACT

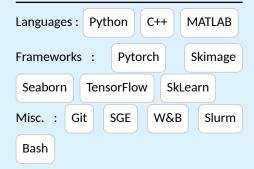
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PROGRAMMING SKILLS



PUBLICATIONS

Feature Representations for Automatic Meerkat Vocalization Classification

I.Mahmoud, E. Sarkar, M. Manser, M. Magimai.-

₩ 2024

% arXiv

Comparing supervised and self-supervised embedding for ExVo Multi-Task learning track

T. Purohit, I. Ben Mahmoud, B. Vlasenko, M. Magimai.-Doss

₩ 2022

% arXiv

LANGUAGES

French Native
English Fluent
Arabic Intermediate
Spanish Intermediate

HOBBIES & INTERESTS

- Festival Organization: Engaged as a committee member in organizing Premices Festival in Lausanne
- * Cooking: Enthusiastic about exploring and testing a variety of international dishes.

EXPERIENCE

R&D engineer

October 2023- now

Idiap research institute, developers group

- Conduct research on application of self-supervised learning models on bioacoustics.
- Develop deep learning model to analyze and classify complex acoustic patterns, improving classification accuracy of animals vocalizations.
- Apply signal processing and statistical modeling techniques to extract meaningful features from time-series.
- Collaboration in teams for side projects such as the onboarding of new comers at Idiap, the organization of the ICC hackathon and etc.

Skills: CI/CD, Pre-commit, Python Packaging, Docker, Speech Analysis, Code quality, VSCode, model development

Trainee in Al Feb 2022 - July 2023

Idiap research institute, audio & speech processing group

• Conducted research to explore and implement machine learning techniques for precise segmentation and classification of bioacoustic signals.

Skills: Pytorch-lightening, Torchaudio, sklearn, Speech processing, data handling

Research student

Mar 2021 - Aug 2021

EPFL, Signal processing laboratory (LTS5)

- Successfully implemented an image processing technique, based on a probability map, that asses and splits confluent lesions on MRI brain images of multiple sclerosis patients.
- Investigated textural information of MRI brain images using advanced mathematical analysis to enable more precise analysis.

 ${\bf Skills: Skimage, scipy, image\ processing,\ data\ processing}$

EDUCATION

Master in Artificial Intelligence

Feb 2022 - Aug 2023

UniDistance Switzerland

Thesis title: Comparative analysis of machine learning techniques for bioacoustic signals classification: A case study with Meerkat vocalizations

Main classes: Deep Learning, Machine learning, Robotics; Natural Language Processing, Speech processing

Master in Applied physics

Feb 2019 - Aug 2021

École Polytechnique Fédérale de Lausanne (EPFL)

Thesis title: Automated process to assess confluent multiple sclerosis lesions on brain magnetic resonance imaging

Main classes: Image processing, applied bio-statistics, design of experiments

Bachelor in Physics

Sept 2015 - Feb 2019

École Polytechnique Fédérale de Lausanne (EPFL)