

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

Languages :

Python

C++

MATLAB

Frameworks :

Pytorch

Skimage

Seaborn

TensorFlow

SkLearn

Misc. :

Git

SGE

W&B

Slurm

Bash

PUBLICATIONS

Feature Representations for Automatic Meerkat Vocalization Classification

👤 I.Mahmoud, E. Sarkar, M. Manser, M. Magimai.-Doss
📅 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 Pre-mices 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 AI 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.

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)