[redacted]

[redacted]

Machine Learning Engineer · PhD

[redacted]

[redacted] | [redacted] | [redacted] | [redacted]

Summary

PhD finalist in Biomedical Engineering at U[redacted] cações (IT).

My PhD focused on developing artificial intelligence algorithms for emotion recognition from physiological signals, which resulted in a strong publication record with 10+ papers in peer-reviewed journals (8 in Q1, 2 in Q2, 3 under revision).

Additionally, my PhD journey has been marked by contributions to over 15+ collaborations (6 international, 9 national), 5+ workshops (including a NATO talk), and 5+ scientific fairs.

Besides scientific output, my work includes the end-to-end development of [redacted], a platform for group physiological data collection in an audience, showcased at the 2019 WebSummit, at the European Commission's Resonances III Fest. and an online theatre in collaboration with [redacted]. This project underlined my multi-faced skills in software architecture, front-end and back-end, and reflected my commitment to learning and applying new technologies.

Experience

[redacted] — *Lisbon, Portugal*

Biomedical Eng. PhD Student | Researcher — *Jan. 2019 - Present*

Emotion Recognition

- Developmed Machine Learning algorithms for emotion recognition based on multimodal physiological data with superior to comparable results to the state-of-the-art for selected datasets (SJR: Q2; IF: 3.847 [1]). Survey of the field (SRJ: Q1; IF: 3.9 [2]).
- Developed feature extraction libraries (time, frequency, time-frequency, cepstral, phase-space) available at [redacted] Python toolbox for biosignal processing (SRJ: Q2; IF: 3.4 [3], under review).
- Created a real-world dataset for group emotion recognition based on physiological data, containing 31 movie sessions, 380+ hours of data from over 190 subjects. (SJQ: Q1; IF: 9.8 [4]).

Back-end Development

- Developed of WiFi and Bluetooth communication module for group data collection and storage using: [redacted] devices. Reported multimodal physiological data collection using 20 devices at 25 Hz and 10 devices at 60 Hz (SJR: Q1; IF: 5.606 [5]).

Front-end Development

- Developed an user graphical interface to observe and annotate physiological data in real-time (SJR:Q1; IF: 13.99 [6], under review).

MSc and BSc Students Supervision

- Co-supervised over 3 MSc thesis and 9 BSc projects. Four papers published (2 Q1, 1 Q1 under revision and 2 Int'l Conf.).

[redacted] Student Group — *Lisbon, Portugal*

Logistics Coordinator — *Jan. 2022 - Present*

Operations Coordinator

- Managed the instrumentation inventory.

Outreach

- Organized and participated in 10+ outreach activities (scientific fairs, instagram posts, lab visits).

[redacted] — *Amsterdam, Netherlands*

Visiting Student working on Emotion Recognition using Deep Learning — *Jan. 2022 - Jul. 2022*

- Developed novel interpersonal weighted group synchrony approach for emotion recognition, surpassing previous work for K-EmoCon dataset on arousal, and providing a new baseline on AMIGOS for long-videos (SJR:Q1; IF: 13.99 [7]).

[redacted] — *Lisbon, Portugal*

Research Assistant on Machine Learning — *Feb. 2018 - Jan. 2019*

- Implemented Semi-Supervised Active Learning for Human Activity Recognition algorithms based on smartphone inertial sensors, reducing the annotated data by 89+% while maintaining an accurate performance (SJR: Q1; IF: 3.847 [8]).
- Developed TSFEL - a library for time series feature extraction and selection (SRJ: Q2; IF: 3.4 [9]).

Teaching Experience

2020-2023 **Teaching Assistant,** Machine Learning in Bioengineering. Responsible for practical lectures and group projects orientation and evaluation. Lecture on classifier fusion. — [redacted] | ULisboa

2019 **Teaching Assistant,** [redacted] Responsible for practical lectures. — [redacted] | ULisboa

Education

2019 - 2024 **PhD in Biomedical Engineering,** [redacted] *Lisbon, Portugal*
2013 - 2018 **Master in Biomedical Engineering,** [redacted] *Lisbon, Portugal*
2016 - 2017 **Erasmus,** [redacted] *Wien, Austria*

Skills

Technical skills Python, LaTeX, Git, PyTorch, TensorFlow, Keras, Scikit-learn, Pandas, Numpy, Matplotlib, Seaborn, Linux, MAC OS
Back-end Flask, FAST API, SQLAlchemy
Front-end Javascript, HTML, CSS, Jinja2, D3, Jquery
Languages Portuguese (native), English (fluent), Spanish (reading and listening comprehension), German (beginner and eager to learn)

Collaborations

[redacted] iscte [redacted]

Selected Publications

- [1] [redacted]
- [2] [redacted]
- [3] [redacted]
- [4] [redacted]
- [5] [redacted]
- [6] [redacted]
- [7] [redacted]
- [8] [redacted]
- [9] [redacted]