

ANA SOFIA CARMO

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PhD with a strong foundation in statistical analysis, machine learning, and data modeling. Proficient in Python, with hands-on experience in designing experiments and analyzing large datasets. Committed to continuous learning and excited to contribute to data-driven innovation in an industry setting.

HIGHLIGHTS

- Programming in **Python, Git, Jupyter**
- Data mining using **NumPy, Pandas, SciPy**
- Data visualization with **Plotly, Matplotlib**
- Modeling & analysis using **Scikit-learn, PyTorch**
- Excellent **communication** skills
- **Autonomy & critical thinking**
- Strong **problem-solving** abilities
- Experiment design and **real-world deployment**

EXPERIENCE

- Feb. 2021 – Present

Information and Data Sciences PhD Candidate | Instituto de Telecomunicações

 - **Data Analysis and Machine Learning:** Analyzed a multimodal time series dataset with 900+ days for rare event (seizure) likelihood forecasting.
 - **Statistical Analysis:** Used statistical tests to compare alternative devices, providing data-driven insights for method selection ([project link](#)); conducted a meta-analysis to compare algorithm performance ([project link](#)).
 - **Collaborative Projects:** Worked with interdisciplinary teams to integrate solutions into healthcare applications, resulting in 4 publications in top-tier journals, 5 conference proceedings, and 2 frameworks for long-term data acquisition, with 500h+ of wearable data collected.
 - **Technical Communication:** Delivered 10+ talks and workshops to diversified audiences, including general public, higher-education students, and the scientific community. Also had a supporting role in the organization of 3 editions of student summer internships, including content preparation and contact with participants and speakers.

Sep. 2021 – Dec. 2024

Teaching Assistant | Instituto Superior Técnico, Portugal

- Taught 80h+ of higher-education level practical classes on machine learning and instrumentation. Received excellent student feedback with regards to pedagogical capacity, communication, and student-teacher interaction.

PROJECTS

- May. 2024 – Present

A Framework for Rare Event Forecasting | Python, Numpy, Scikit-learn, Plotly

 - Implemented an open-source Python framework for standardized development and evaluation of seizure forecasting algorithms on long-term multimodal data ([project link](#)), decreasing development time and minimizing the risk of unintentional methodological variations.

Jan. 2024 – Present

PreEpiSeizures - A Seizure Prediction Database | MongoDB, SSH

- Leading the task of transforming the PreEpiSeizures dataset (29 patients, and over 1000h of wearable data) into a query-able and shareable database. Based on MongoDB to store metadata & SSH to access data files.

EDUCATION

- **PhD in Biomedical Engineering**
Instituto Superior Técnico, Portugal
- **Integrated MSc in Biomedical Engineering**
Instituto Superior Técnico, Portugal

OTHER INFO

- **Spoken and written languages:** English (C2), Portuguese (C2), German (A2)