# ANA SOFIA CARMO

## DATA SCIENTIST

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## WORK EXPERIENCE

**INFORMATION AND DATA SCIENCES PHD STUDENT** | Instituto de Telecomunicações Feb. 2021 – Present

- **Data Analysis and Machine Learning:** Analyzed a multimodal time series dataset with 900+ days for rare event (seizure) likelihood forecasting.
- **Statistical Analysis:** Conducted a meta-analysis to compare algorithm performance and used statistical tests to compare the effectiveness of alternative devices, providing data-driven insights for method selection.
- **Collaborative Projects:** Worked with interdisciplinary teams in the fields of engineering and medicine to integrate solutions into healthcare applications, resulting in 3 publications in top-tier journals, 4 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.

**TEACHING ASSISTANT** | Instituto Superior Técnico, Portugal Sep. 2021 – Dec. 2024

- Taught over 80h of higher-education level practical classes on machine learning and instrumentation. This role also included resource preparation, student mentoring, and evaluation. Received excellent student feedback with regards to pedagogical capacity and student-teacher interaction.

## PROJECTS

**LIKELIHOOD FORECAST OF RARE EVENTS** | PyTorch, LSTM May. 2024 – Present

**PREEPISEIZURES - A SEIZURE PREDICTION DATABASE** | MongoDB, SSH Jan. 2024 – Present

- Lead the task of transforming the PreEpiSeizures dataset (29 patients, and over 1000h of wearable data) into a query-able and shareable database. Used MongoDB to store metadata on patients, acquisition sessions, and events. Created sever to access acquisition files.

## EDUCATION

**PHD IN BIOMEDICAL ENGINEERING** | Instituto Superior Técnico, Portugal Feb. 2021 – Present

- Developed advanced machine learning models and time series analysis techniques for predicting health events, focusing on long-term physiological data acquisition and processing, resulting in significant accuracy improvements and multiple interdisciplinary collaborations.

## KEY SKILLS

**PROGRAMMING LANGUAGES & FRAMEWORKS:** Python, R, Bash, Dart, Flutter
**MACHINE LEARNING & FRAMEWORKS:** LSTM, PyTorch, PyTorch Lightning, Scikit-learn
**DATA ANALYSIS AND VISUALIZATION:** NumPy, SciPy, Pandas, Plotly
**TOOLS:** Git, Jupyter, LateX
**SPOKEN AND WRITTEN LANGUAGES:** Portuguese (native), English (fluent), German (beginner)