JAUME PALMER REAL

Mathematical Modelling Engineer

(+34) 690 642 539
(+45) 91 86 26 17
rp.jaume@gmail.com
jpalm3r
jaumepr

SUMMARY

I am an engineer specialized in mathematical modelling and data science.
I am curious, creative and resourceful. During my career, I have gravitated towards projects where I use time-series analysis and other machine learning tools to describe physical phenomena.
Still, I have developed a strong and wide mathematical foundation which helps me adapt to new scientific and technological challenges.

SKILLS

Languages Spanish, Catalan (Native)
English (Proficient)
Danish (Beginner)

Programming Python, R, SQL, C, C++, html.
↪ *Pandas, Statsmodels, Scikit-learn, Darts, Tensorflow, Plotly, Marimo, Streamlit.*

Other Tech Git, UV, Dash, Quarto, Docker, ADO, BigQuery, AWS.

WORK

4/2024 – Current
Copenhagen

Data & Modelling Specialist — **DHI**

- Integrating data driven methods to research and commercial projects
- Building Python tools to enhance and optimize the workflows of our in-house engineers
- Designing internal courses to educate technical staff on time series and machine learning

`Python Package Development / Time Series Forecasting / Data Literacy`

9/2023 – 4/2024
Copenhagen

Data Scientist — **Oktogrid**

- Developing models for predicting potential failures in medium-sized electric transformers
- Designing data pipelines that guarantee the quality of our models
- Supervising research pilot projects to identify new data solutions

`Forecasting / Predictive Maintenance / Anomaly Detection`

9/2022 – 9/2023
Copenhagen

Quantitative Developer — **Ørsted (EPICO IT)**

- Assisting the technical department of subsea cables with mathematical insight
- Developing new mathematical tools to support the installation of cables in offshore wind farms
- Maintaining and expanding a production repository

`Full-Stack Development / Model Conceptualization / R&D`

2/2018 – 2/2019
Barcelona

Researcher — **CIMNE-Beegroup**

- Modelling the consumption of heat pumps from blocks of buildings

`Machine Learning / Time Series Analysis / Dynamical Systems`

10/2017 – 2/2018
Barcelona

Research Assistant — **Complexity Lab (UB)**

- Investigating political discussion in twitter using methods from complexity science
- Creating visualizations to showcase different roles and effects during online discussion

`Complex Networks / Data Visualization`

9/2015 – 9/2016
Barcelona

Process Owner — **HP inc.**

- Analyzing sales operations of printing services and accessories

12/2014 – 9/2015
Barcelona

Packaging Engineer — **Coty inc.**

- Supporting the development and manufacturing of packaging components

EDUCATION

2/2019 - 7/2022 **PhD in Applied Mathematics** — **Technical University of Denmark**

Thesis: Exploring novel data-driven methods to evaluate energy efficiency of occupied buildings. The work combined statistical methods and physical knowledge to develop tools that are scalable and easy to interpret

9/2016 - 9/2017 **MSc in Mathematical Modelling** — **Autonomous University of Barcelona**

Thesis: Modelling the growth of online social networks. The developed models were later used to simulate the competition of multiple social networks to increase their user base

9/2008 - 9/2014 **Mechanical Engineering** — **Polytechnic University of Catalonia**

Thesis: Analysis and optimization of the dynamical response of a vehicle system

OUTPUT & PROJECTS

9/2022 **Data Visualization Project** **link to page**
About: Analyzing the magnitude and distribution of tourist vacancies on the island of Mallorca

2/2022 **Data Visualization Project** **link to page**
About: : Identifying biases while discussing the pandemic in US-centered online political forums

5/2020 **Data Visualization Project** **link to page**
About: Quantifying the growth and effects of the pandemic over online discussion

9/2022 **Scientific Publication** **link to article**
About: Improving previous work and introducing a framework to improve the classification of building types based on their consumption patterns

7/2022 **Collaboration** **link to article**
About: Proposing an automated framework for identifying suitable models of building heat dynamics

8/2021 **Scientific Publication** **link to article**
About: Designing a stochastic tool to simulate building energy consumption profiles

8/2021 **Scientific Publication** **link to article**
About: Leveraging physics to assess household indoor conditions based on non-intrusive data

1/2021 **Scientific Publication** **link to article**
About: Presenting a data-efficient method to evaluate building energy performance based on their cooling dynamics

10/2020 **Collaboration** **link to article**
About: Introducing a non-linear dynamical model to evaluate the flexibility of energy systems

TEACHING & TALKS

2/2022 **Guest Speaker** **DTU seminar on COVID misinformation**
Topic: Presenting results from a visualization project

8/2021 **Presenting Author** **Building Simulation Conference**
Topic: Presenting results from PhD

8/2021 **Presenting Author** **Int. Building Physics Conference**
Topic: Presenting results from PhD

3/2021 **Guest Speaker** **NTNU Energy Transition Week**
Topic: Presenting results from PhD

8/2021 – 12/2021 **Teaching Assistant** **DTU course (nr. 02427)**
Topic: Advanced Time Series Analysis

1/2020 - 5/2020 **Teaching Assistant** **DTU course (nr. 02417)**
Topic: Time Series Analysis

8/2019 & 8/2020 & 8/2021 **Teaching assistant** **DTU Summer School (nr. 02960)**
Topic: Modelling and Forecasting in Energy Systems