Jorge Cebola Borbinha

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Results-driven Analyst & Quantitative Researcher with background in Engineering and 7+ years of experience in data handling, visualization and statistical analysis.

Strong programming expertise in Python, SQL, FORTRAN and C++, with hands-on experience in data analysis libraries and proficient in technical communication. My personal webpage where I showcase my projects: jorge-borbinha.github.io.

Looking to apply my skills towards driving data-informed decision making that impacts modern economics.

Experience

Research Fellow, Centre for Nuclear Sciences and Technologies (C2TN), Instituto Superior Técnico — 2020 - 2025

✓ Developed and implemented pipelines/scripts for data wrangling and visualization of very large datasets (more than 20M datapoints) in the scope of medical imaging/therapy (python, SQL and Excel) – demonstrated proficiency in data wrangling and optimized generation of human voxel model (i.e. 3D human-like representations);

✓ Worked with health industry to build dashboards, aiming to streamline presentation of data insights about medical physics and performance indicators, employing python and Excel.

✓ Applied statistical and computational models (e.g. Monte Carlo simulation, regression) to simulate personalized dosimetry for radiation therapy;

Research Fellow, Instituto de Plasmas e Fusão Nuclear, Instituto Superior Técnico
Project FRIENDS (Fleet of dRones for radIological inspEction, commuNication anD reScue) — 2019 - 2020

✓ Coordinated with regulatory bodies and radiation industry partners to define operational protocols and ensure legislative compliance for radiological field exercises.

✓ Developed Python scripts, leveraging statistical and computational models (e.g., Monte Carlo simulation, regression), to locate and identify radiation sources in northern Portugal from drone scouting data.

✓ Performed radiation detector performance analysis and generated technical datasets using Python/MATLAB and advanced Excel functions.

Research Fellow, C2TN, Instituto Superior Técnico — 2018 - 2019

✓ Engineered an automated FORTRAN-based ETL pipeline to centralize human voxel model generation – significantly reduced manual workload and streamled the onboarding of new researchers/students.

✓ Developed a FORTRAN analysis tool to manipulate organ volumes in voxel models – quantified significant radiation dose underestimations in standard models and improved research accuracy.

Skills

✓ **Programming:** Python (NumPy, pandas, plotly, matplotlib, seaborn, scikit-learn, scipy), SQL, C++, FORTRAN;

✓ **Data Analysis:** Data wrangling, Probability & Statistics, Data Visualization, Machine Learning;

✓ **Technical Tools:** Monte Carlo simulation, Excel (advanced), PostgreSQL, Linux command line, Prompt engineering (e.g. ChatGPT, Gemini, Perplexity);

✓ **Communication/Adaptability:** Wrote scientific articles/reports, presented at international conferences (translated complex data and data-driven insights into actionable recommendations for diverse audiences), collaborated in national/international projects and conference organization (handled logistics/marketing/sponsors/outreach);

✓ **Other:** R, MATLAB, Object-oriented programming.

Education

Advanced Studies Diploma Physics Engineering	Instituto Superior Técnico, Universidade de Lisboa	2024
DEV210x : Introduction to C++	Certification in Microsoft Corporation (certificate)	2018
Master Biomedical Engineering	Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa	2017

Honors & Awards

European Radiation Dosimetry Group Young Scientist Award — 2023
Fundação para a Ciência e Tecnologia PhD Grant Recipient — 2020

Languages

✓ Portuguese: C2
✓ English: C2
✓ Spanish: B2

Interests

✓ History;
✓ Cooking;
✓ Finance.