Daniel Precioso, PhD

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Data Scientist

I have **over 6 years of experience** in **machine learning** and **Python**. My journey has taken me through both academic research and industry roles, where I participated in projects related to healthcare, energy, and logistics. My main skills include problem-solving, automating tasks and simplifying complex ideas.
I am passionate about collaborating with others, mentoring teammates, and teaching. One of my favourite projects involved developing the "Google Maps of the Sea", using mathematical optimization and weather data to reduce the GHG emissions of shipping routes. I was invited to pitch this idea to the European Parliament!

Technical Skills

Languages	:	Python, Matlab, R
Libraries	:	NumPy, Pandas, scikit-learn, TensorFlow, JAX, Streamlit
Dev Tools	:	Visual Studio Code, Git, Github
Academic Tools	:	Latex, Overleaf, Blackboard, Wordpress

Experience

Postdoctoral Researcher & Adjunct Professor — Sep 2023 – Present
IE University — *Madrid, Spain*

- Conducting research on mathematical optimization to reduce GHG emissions of ships using weather data.
- Active member of IE Research Datalab; responsible for writing and designing the official website.
- Teaching courses in the Bachelor of Applied Mathematics program: Computer Programming I, Coding Lab, and Applied Math Lab.

Director of Research and Development — Apr 2023 – Present
Canonical Green — *Madrid, Spain*

- Developing data science solutions for ecological transition in the maritime industry.
- Delivering persuasive commercial and technical presentations.

Data Scientist — Sep 2022 – Apr 2023
Komorebi AI — *Madrid, Spain*

- Performing data cleaning, manipulation, and visualization.
- Designing, training, and deploying machine learning and deep learning models using scikit-learn.
- Developing a dashboard to guide industrial decision-making using Streamlit.

Predoctoral Research Staff — Sep 2019 – Aug 2022
University of Cádiz — *Cádiz, Spain*

- Applying machine learning for Industry 4.0: non-intrusive load monitoring and analysis of fishing populations.
- Utilizing data science in healthcare: forecasting ICU use during COVID and monitoring neonates using computer vision.
- Presenting research findings to both technical and non-technical audiences.
- Publishing research papers in peer-reviewed journals.

Junior Data Scientist — Jan 2019 – Jun 2019
Foqum — *Madrid, Spain*

Education

Phd in Data Science Sep 2019 – Jul 2023
University of Cádiz *Cádiz, Spain*

MSc in Statistical and Computational Information Processing Sep 2018 – Jul 2019
Universidad Politécnica de Madrid *Madrid, Spain*

Degree in Physics Sep 2014 – Jul 2018
Complutense University of Madrid *Madrid, Spain*

Projects

Weather Navigation *Mathematical Optimization, Maritime Transport* IE University

- Optimization of maritime routes for a more efficient, safer and decarbonized transport
- Funded by the BBVA Foundation and the Spanish Agencia Estatal de Investigación under grant TED2021-129455B-I00.
- I served as a main researcher and maintained the official project website https://weathernavigation.com/.

NeoCam *Computer Vision, Healthcare* Univesidad de Cádiz

- We used the Luxonis OAK-D smart camera to build a contactless monitoring system for newborn babies.
- The proposed solution combined computer vision, machine learning, edge computing, cloud computing and Internet of things.
- NeoCam project was awarded the second prize in the international final of OpenCV AI Competition 2021, in which over 1400 teams participated.

Smart Shipping *Mathematical Optimization, Maritime Transport* Univesidad de Cádiz

- Our goal was to optimize marine shipping routes, by using real time information of ocean currents, wind and waves.
- Smart Shipping project was awarded the second prize in the international final of Ocean Hackathon 2021, hosted by Campus Mondiale de la Mer in Brest (France).

UCAnFly *Computer Modeling, Astrophysics* Univesidad de Cádiz

- We designed an nanosatellite to test emerging technologies for space-based gravitational wave detectors, such as LISA.
- UCAnFly was led by a multidisciplinary team at the University of Cádiz, with the support of the Education Office of the European Space Agency, under the educational Fly Your Satellite! programme.

ATENEA *Computer Vision, Industrial Automation* Univesidad de Cádiz

- This project was hosted by Airbus D&S with financial support from the CDTI Interconnecta program.
- The aim was to introduce machine learning and natural language processing to streamline certain manufacturing processes in Airbus D&S production plants.

Certifications

- Machine learning in Python with scikit-learn (France Université Numérique)
- XV Modeling Week at UCM (Coordinator) (UCM)
- Fly your Satellite - 3 CDR Virtual Workshop (ESA)
- TensorFlow in Practice Specialization (Coursera)
- Applied Social Network Analysis in Python (Coursera)
- Applied Machine Learning in Python (Coursera)
- Applied Text Mining in Python (Coursera)
- Introduction to Data Science in Python (Coursera)

Publications

- HADAD: Hexagonal A-Star with Differential Algorithm for Data-driven routing . In review
- Hybrid Search method for Zermelo's navigation problem . Computational and Applied Mathematics, 2024 (Q2)
- Aggregation dynamics of tropical tunas around drifting floating objects based on large-scale echo-sounder data . Marine Ecology Progress Series, 2023 (Q1)
- Effectiveness of non-pharmaceutical interventions in nine fields of activity to decrease SARS-CoV-2 transmission (Spain, September 2020-May 2021) . Frontiers in Public Health, 2023 (Q1)
- Thresholding Methods in Non-Intrusive Load Monitoring . The Journal of Supercomputing, 2023 (Q2)
- NeoCam: An edge-cloud platform for non-invasive real-time monitoring in neonatal intensive care units . IEEE Journal of Biomedical and Health Informatics, 2023 (Q1)
- TUN-AI: Tuna biomass estimation with Machine Learning models trained on oceanography and echosounder FAD data . Fisheries Research, 2022 (Q2)