Daniel Precioso, PhD

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Data Scientist

I have **more than 6 years of experience** in **knowledge transfer** between academia and industry. My diverse skill set includes problem-solving, automation, and simplifying complex ideas, using my expertise in **Data Science** and **Machine Learning**. This unique combination of skills has enabled me to address challenges across various sectors such as healthcare, energy, aerospace, and logistics.
My goal is to not only solve industry challenges but also advance technology by publishing academic research. I enjoy sharing ideas at conferences and exhibitions and teaching new generations of scientists and professionals. I am passionate about collaboration, mentoring teammates, and transforming scientific ideas into industrial projects.

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*

- Main lines of research:
  * Simulate the effect of climate change, under different SSP-RCP scenarios, on personal insurance.
  * Implement the novel Kolmogorov-Arnold Networks (KANs) on weather forecasting.
  * 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: Computer Programming I, Coding Lab, Time Series Analysis, and Applied Math Lab.

COO — Apr 2023 – Present
Canonical Green — *Madrid, Spain*

- Developing data science solutions for ecological transition in the maritime industry.
- Delivering effective 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 Computer Engineering 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

KAN4Met *Machine Learning, Meteorology* IE University

- Kolmogorov-Arnold Networks with applications in weather forecasting
- Funded by the Spanish Ministerio de Ciencia, Educación y Universidades.
- I served as part of the research team.

Insurance and Tech *Data Science, Actuarial Science* IE University

- Explore the intersection of insurance, emerging technologies, and societal challenges such as climate change.
- This project was a collaboration between IE School of Science & Technology and Vienna Insurance Group (VIG).
- I served as part of the research team.

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/.
- I was invited to pitch this idea to the European Parliament.

Tun-AI *Deep Learning, Fishing Industry* Komorebi AI

- In collaboration with Satlink, a company specializing in echosounder buoys, this project aimed to enhance the monitoring of tuna populations to prevent overfishing.
- My role involved cleaning and processing raw data to be used in machine learning models.
- We employed gradient-boosted decision trees and convolutional neural networks, which were efficient enough for real-time fish monitoring.

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.
- The patent for NeoCam technology was officially registered under our names in 2023.

COVID-19 *Time Series Forecasting, Healthcare* Univesidad de Cádiz

- I collaborated with the Coordination Centre for Health Alerts and Emergencies in Spain to develop a model that could simulate and predict ICU bed occupancy by COVID-19 patients.
- We then used that information to study the effect of non-pharmaceutical interventions (NPIs) in the spread of COVID-19.

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.

Courses and Certifications

- AI in Education: Leveraging ChatGPT for Teaching (Coursera)
- 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

- New analysis in the preliminary design for LNG and LPG ships. Marine Structures, Elsevier, 2025 (Q1).
- HADAD: Hexagonal A-Star with Differential Algorithm Designed for weather routing. Ocean Engineering, 2024 (Q1)
- 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)