DATHARSIS
DATA SPEAKS, WE INTERPRET

HORIZON EUROPE PARTNER PROFILE

Explainable data analysis for life science consortia

Datharsis (Explain Tech S.L.) is a deep tech spin-off of the **University of Granada**, Spain, specialised in the **explainable analysis of omics data** across the life sciences, from health to agri-food and ecology. We help research teams design their studies and turn high-dimensional, noisy and multimodal data into traceable, reproducible evidence, even from small cohorts and complex experimental designs. In research consortia we lead the data analysis work: experimental design, integration of omics, clinical and other complex data, and interpretable, validated results. Our methods come from twenty years of peer-reviewed research at the Computational Data Science Laboratory (CoDaS Lab), and we use them under an exclusive licence from the university.

WHAT WE BRING TO A CONSORTIUM

- **Leadership of the data analysis work package**, or contribution to specific analysis tasks
- **Statistical design of experiments** from the proposal stage: factors, interactions, sampling strategy and sample size, for more power with fewer samples
- **Multi-omics integration** with clinical, spectral or environmental data
- **Interpretable biomarkers, indicators and signatures**, with rigorous statistical validation
- **Reproducible, auditable pipelines** aligned with FAIR principles
- Access to **DathaSuite**, our analysis platform, for consortium researchers
- **Training** in experimental design and interpretable analysis (DathaXplain)

HOW WE WORK

Our models are **interpretable by design**, not explained afterwards with post-hoc layers. Methods developed by our team, such as **ASCA and vASCA**, **group-wise models** and **MEDA**, reveal which variables drive each effect in experiments with several crossed factors. **Cross-validation** and **permutation testing** confirm that results are robust, not artefacts.

DATA WE WORK WITH

Omics: metabolomics, proteomics, transcriptomics, epigenomics, metagenomics and spatial omics.

Combined with: clinical, phenotypic and real-world data, spectroscopy (FTIR, NMR, Raman), sensor and environmental data, longitudinal studies with missing values.

WHERE OUR TEAM'S METHODS HAVE BEEN APPLIED

HEALTH

- Metabolomic prediction of chemotherapy response and survival in cancer
- Multi-omics profiling of a paediatric cohort: microbiome, metabolomics and clinical data
- Data analysis methods for single-cell spatial omics

AGRI-FOOD

- Spread of a mycotoxin in wheat varieties over the crop cycle
- Food authentication and traceability, verifying the declared origin of samples

ECOLOGY AND ENVIRONMENT

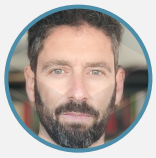
- Effect of mistletoe parasitism on the pine metabolome
- Effect of contaminants across three crab tissues
- Warming trends in high mountain lakes

Documented cases: https://www.datharsis.com/en/use-cases · Publications: https://www.datharsis.com/en/scientific-evidence

TEAM

Rosa de Molina
CEO & CTO

Computer engineer with over 20 years in technology and 14 years managing operations in a university biotech spin-off. Leads the company and the development of DathaSuite.



Prof. José Camacho
Chief Scientific Advisor

Full Professor at the University of Granada, head of CoDaS Lab, ranked in Stanford's top 2% of scientists worldwide. Leads scientific strategy and participation in European projects.

Let's talk about your consortium
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