



This project is co-financed by the European Union
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ORGANIZATION: Rey Juan Carlos University

WORKSHOP NAME: Digital and Smart Health

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Description of the Organisation

Rey Juan Carlos University (URJC), established in 1996, is a public institution located in the Madrid region. Despite its relatively recent inception, it has rapidly grown to accommodate approximately 43,000 students, making it the most modern among public universities in the area.

URJC is committed to promoting research that contributes to economic and social development. This commitment is reflected in its efforts to enhance research activities and facilitate the dissemination and transfer of knowledge to society.

The university actively collaborates with companies and institutions and participates in national and international initiatives to advance science and technology.

Your Teams' Expertise

- Participation in **European-funded projects** and collaboration with industry partners.
- Contribution to **scientific publications and conferences** in AI, healthcare, and smart systems.
- Strong emphasis on **ethical AI**, explainability, and compliance with EU regulations (e.g., **EU Taxonomy Regulation**).



Data Science & Analytics

- Advanced **data processing, cleaning, and feature engineering** for large datasets.
- Experience in **multivariate time series analysis** for forecasting and anomaly detection.
- **Natural Language Processing (NLP)** for text mining, sentiment analysis, and chatbot development.
- Application of **graph-based learning** for complex data structures, such as healthcare networks and social graphs.



- Healthcare & Smart Sensing Applications
- AI-driven sensor data analysis in elderly home care and ICU patient monitoring.
- Medical image processing, including skin lesion segmentation and AMR prediction.
- Integration of wearable technology and IoT for real-time health monitoring.

Your Research Fields

XXX

XXX



XXX



XXX

Your On-going Projects

- Sistemas de apoyo a la decisión para predecir infecciones causadas por bacterias multirresistentes usando técnicas avanzadas, dirigidas por datos y de analítica visual. **Funding:** Agencia Estatal de Investigación (211.250€, 1 Sep 2024 – 31 Aug 2027). **PI:** C. Soguero-Ruiz, M. Rubio-Sánchez
- Intelligent decision support systems to predict chronic and critical patient health trajectories using cutting-edge visual analytics and data-driven techniques. **Funding:** Agencia Estatal de Investigación (14.950€, 1 Jan 2024 – 31 Mar 2025). **PI:** C. Soguero-Ruiz, M. Rubio-Sánchez
- Bayesian Machine Learning for Data Defined in Graphs. Funding: Community of Madrid. Ref.F861- 2022 (39.418,44€, 15 Jun 2022-14 Jun 2024). **PI:** Luca Martino. Participation: researcher
- Multimodal pattern recognition for characterization and prediction of the clinical evolution of patients affected by SARS-COV-2. Funding: Universidad Rey Juan Carlos (20.000€, 1 Jan 2021-31 Dec 2021), **PI:** I. Mora-Jiménez, A. Torrado. Participation: researcher

Your On-going Projects

- Watching the Risk Factors: Artificial Intelligence and the Prevention of Chronic Conditions. Funding: Comisión Europea (495.197 €, 1 Jan 2021 – 1 Dec 024). PI: **C. Soguero-Ruiz**, I. Mora Jiménez.
- New Machine Learning and Visual Analysis Techniques to Characterize Risk Factors Associated with Multidrug-Resistant Bacteria Funding: Ministry of Economy and Competitiveness. Ref: PID2019-107768RA-I00. (105.512€, 1 Jun 2020 – 31 May 2023). PI: **C. Soguero-Ruiz**.
- Machine Learning Methods and Clinical Data Visualization for Predicting Microbial Multidrug Resistance in the Intensive Care Unit. Funding: Community of Madrid. Ref: 2020-661. (32.214,52€, 1 Jan 2020 – 31 Dec 2021). PI: **C. Soguero Ruiz**.
- From high blood pressure to diabetes. Identification of risk factors using machine learning with heterogeneous data. Funding: National Health Institute Carlos III. Ref: DTS17/00158 (28.050€, 1 Jan 2018-31 Dec 2020). PI: **C. Soguero-Ruiz**
- Knowledge Extraction for Clinical Evolution Prediction using Data Analytics.Funding: Spanish Ministry of Economy and Competitiveness. Ref: TEC2016-75361-R (143.748,00 €, 30 Dec 2016-29 Dec 2020). PI: I. Mora Jiménez, O. Barquero. Participation: researcher

Project Idea

Call Topic: EIC Pathfinder

Deadline Dates:

- ☐ **Objectives: applying AI for nursing home**
- ☐ **Expected Results: Create a system to predict events in advance**

Project Idea

Call Topic: Cluster 8 and 9

Deadline Dates:

- ☐ **Objectives: Develop a system to characterize sleep quality based on artificial intelligence**
- ☐ **Expected Results: Analysis sleep pattern by using a mobile app to be integrated in the clinical practice**

Project Idea

Call Topic: Cluster 8 and 9

Deadline Dates:

- ☐ **Objectives: Develop a system based on genAI, graphs and multimodal approaches to characterize chronic diseases**
- ☐ **Expected Results: A cutting-edge methodology to be integrated into an app to provide recommendations about good habits of life style.**

Consortium - profile of known partners (if any)

No	Partner Name	Type	Country	Role in the Project
01				
02				
03				
04				
05				

Consortium – required partners

No	Expertise	Type	Country	Role in the project
01				
02				
03				
04				



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