

Driving the future of Artificial Intelligence

NAIR Center (Navarra Artificial Intelligence Research Center) is Navarra's leading center for Artificial Intelligence research. Its unique specialization in AI—grounded in excellence, high-quality research, and a strong international focus—sets it apart from other institutions.

NAIR occupies an intermediary position, acting as a bridge between basic research conducted at universities and applied research carried out at technology centers. Its mission is to close the gap between scientific advances and the real needs of Navarra's business ecosystem and society at large.

In addition, NAIR coordinates the Artificial Intelligence and Data Science specialization area within the Navarra Digital Innovation Hub (IRIS), the region's flagship hub for digital innovation. This role ensures a close alignment with current and future business and technological challenges.

Research Areas

NAIR Center's research areas are aligned with the Smart Specialization Strategy of Navarra (S4) and the European Union's priorities. They are defined as horizontal fields in AI and data science, applied across the vertical sectors of the S4 —energy, mobility, food, advanced industry, and personalized medicine— while also addressing society as a transversal area of impact.



Theoretical foundations of Artificial Intelligence

This area focuses on the study of the mathematical and conceptual foundations of AI. It draws on methods from optimization, statistics, logic, linear and abstract algebra, as well as information theory and the theory of computation

- Information fusion
- Explainability
- Computational neuroscience
- Quantum communication and AI
- Learning theory
- Multimodal learning



Trustworthy Artificial Intelligence

This area addresses the development of AI systems that operate in a reliable, fair, and transparent manner, taking into account their social and environmental impact

- Algorithmic fairness
- Computational and energy efficiency of algorithms
- AI for sustainability and the green transition



Technological applications

This area structures the transfer of research results toward the development of AI-based technological solutions. Its role is to validate and adapt theoretical and methodological advances in real-world settings, facilitating their application in industrial, social, and technological contexts

- AI for autonomous systems
- AI for industry
- AI for society

Main Projects



AI4FLOOD

Adapting and improving municipal prevention through the integration of Artificial Intelligence and citizen participation

BIDEONENA

Artificial Intelligence Techniques to reduce energy consumption in mobile robotics

EcoSwarm

Collective Intelligence for Energy Optimization in Mobile Robotics

IASPEAK

Artificial Intelligence for Speech Rehabilitation

Fragil IA

Artificial intelligence for personalised frailty care

NeuroPredict

Intelligent system that uses neural activity to predict and optimize personalized treatments in stroke rehabilitation.

mHealth

Consumer Behavior in Mobile Health Applications

Explainable artificial intelligence (XAI) applied to multimodal biomedical signals models

AI-Based Approaches to Neurological Signal Processing

New data fusion methods for application in general machine learning problems

HybridD-GM ModelA

Computational methodology for quantum computing simulations

Consumer Optimising the Design and Control of Wind Turbines

UPNA Green Smart and Sustainable Campus



More about our scientific contribution