

# Behavioural modeling and Health Digital Twin for Active Aging

## Background

A Health and Well-being Digital Twin (HWDT) encompasses a comprehensive representation of an individual's physical, mental, emotional, and social aspects within a digital framework. By integrating diverse datasets from wearable devices, biometric and physiological sensors, social interactions, and lifestyle habits, the HWDT is aimed at simulating and forecasting an individual's overall well-being in real-time. It is based on the definition of sophisticated algorithms and machine learning models that process multifaceted data to build a personalized virtual model able to identify patterns and correlations, early detect potential mental health issues, lifestyle-related disorders, and other well-being imbalances, and to offer personalised recommendations to improve the overall health status.

## Topic

In the framework of Active Aging, HWDT can provide an important support to analyze the impact of personal choices and lifestyle on the prevention of aging conditions, including physical and cognitive decline. The activity will focus on the analysis of behavioral patterns and physiological indicators in healthy older adults in order to define a virtual model that can be used to simulate and forecast health outcomes and risk factors associated with aging-related conditions. The model should include heterogeneous data related to physical activity, dietary habits, social interactions, cognitive engagement, and healthcare utilization, and it will be used to define personalized and persuasive strategies to improve the well-being status.

## Type of prospect position

We plan to open positions at the level of **Post-doc Research Fellow** on this topic.

## Funding and partnerships

*Supported by:* [THE](#) Tuscany Health Ecosystem (funded by the National Recovery and Resilience Plan (NRRP), European Union - NextGenerationEU, Innovation Ecosystems)

## Candidate profile

Ideal candidates should have or about to obtain a PhD in Computer Science, Information Engineering, Mathematics, Physics, or closely related disciplines, and a proven track record of excellent University grades. Preferably, the MSc should be in one of the relevant research areas: Artificial Intelligence, BigData analytics, Distributed systems, Digital Health solutions. Good written and spoken communication skills in English are required.

## Contact



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