



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIGITAL MEDICINE AND E-HEALTH

Digital technologies for diagnosing, preventing, monitoring or treating a disease, and use of Information and Communications Technologies in healthcare.

The University of Bologna has advanced skills in management of large amount of digital data. The interdisciplinary research focuses on healthy ageing, cognitive impairment and musculoskeletal conditions, among others.



Research activities spans from the application of virtual/augmented reality (VR/AR) and digital diagnostics and care, to the use of health informatics and mobile technologies.

The research of the University of Bologna covers a wide range of issues:

- Integration of biological systems modelling and medical imaging for the development of innovative diagnostic systems and more effective care practices
- Robot-assisted surgery integrating VR and AR technologies in the operating room
- 3-D kinematic tracking for human movement analysis, artificial vision and gesture recognition
- Motion analysis and physical activity monitoring via wearable systems
- Motor and cognitive assessment in neurological disorders through mobile platforms
- Prevention and rehabilitation platforms for the neuromotor and cognitive domains, neurostimulation, VR/AR and biofeedback-based interfaces for neurorehabilitation
- eHealth/mHealth solutions for digital health, personalised medicine and risk stratification aimed at a better prevention of different pathologies

HIGHLIGHTS

These skills allowed the funding of a number of EU projects (eg. [ISW](#), [PreventIT](#), [MOBILISE-D](#), [ONCORELIEF](#), [RETENTION](#)) and the release of innovative products addressing several aspects of eHealth.

Researchers are also involved in the **National Technology Cluster [OPLON](#)** - *oPportunities for active and healthy LONgevity*: a national flagship program on health and life sciences, aimed at preventing frailty and functional decline and promoting the health of the elderly, planning and developing early diagnosis, care and cure.

Innovative research led to the filing of patents (e.g. Augmented reality glasses for medical applications and corresponding augmented reality system) and the launch of the **academic spin-off mHealthTechnologies Srl**, specialised in CE-marked medical devices, movement analysis, signal processing, algorithm development, wearable sensors, and data mining.