FONDAZIONE BRUNO KESSLER

FUTURE BUILT ON KNOWLEDGE

FBK.EU

Who we are

Fondazione Bruno Kessler (FBK) is a **research** not-for-profit public interest **entity**

Our mission

The mission of **FBK** is:

1. **Scientific research** of excellence
2. **Impact** on society with social and technical innovation

This is made by **attracting** talent and resources aiming at an **international** approach

Vision

FBK is building the future on a new generation of **Artificial Intelligence** which does not replace humans at work or in their everyday life, but collaborates with them

What we do

Highly ranked **scientific research**

FBK can count on a unique mix of competencies thanks to its 6 research centers clustered in two different domains: Science and Technology (ICT, AI, Microsystems, QT, Cyber-security, IoT, 5G, Fog computing) and Humanities (History, Religion and Social Science). Ranked at the 1st place for scientific excellence and for the economic and social impact according to the quality of research ANVUR evaluation

Innovation to impact society and market

Differently from traditional research centers supported by the public sector, FBK is a market oriented organization which combines world-class research with the concrete application of its results in day-to-day lives. We find purpose in seeing research results applied to real life because we want to make an impact on market and society

FBK at a glance

400+
researchers

120+
international **students**

700
square meters **laboratories**

600+
scientific publications / year

94
academic partners
(more than 20 countries)

60+
scientific events
organized / year

18
joint innovation labs
with companies

20+
Startups
incubated

44
patents

52
innovation projects
with private companies
/ year

100+
active EU projects
per year

FBK and AI

FBK is an internationally renowned center that has been conducting research on **Artificial Intelligence** (AI) since 1986. It was the first center in Italy fully dedicated to AI and it is still the Italian research center most recognized internationally in the field of AI. FBK ICT has extended its competences to data science, security and safety, dependable systems, formal methods and software engineering.

Our vision on AI is based on the future challenge of "Integrative AI", i.e., on the computational modeling/mechanization of a diversity of cognitive tasks, integrating a diversity of mathematically heterogeneous representations and reasoning, such as Symbolic and Sub-Symbolic (numeric and probabilistic) representations, Machine (Deep) Learning and Model Based Reasoning, and AI for Networking: Decentralized AI enabled by an Edge Computing paradigm.

We focus on **4 Societal Challenges** which need a **scientific breakthrough**

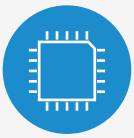
AI for **Health** and **Wellbeing**

AI for **Digital Society** and **Digital Transformation**

AI for **Digital Industry**

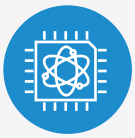
AI for **Cybersecurity**

Related fields of expertise



MICRO & NANOSYSTEMS

We focus on highly functionalized devices to increase sensitivity levels, widen the scope and flexibility of use in various fields (biochemistry, imaging and security, space science and economy) and develop high-performance sensors for Big Science experiments and technology transfer into high-tech applications (automotive and mobility, radiation medicine, industry 4.0, Quantum Technology)



QUANTUM TECHNOLOGY

The Second Quantum Revolution is unfolding now, therefore we push our research activities in the areas of fundamental quantum science, quantum communications, quantum computing, quantum simulations, future sensors and metrology. We are actively collaborating in projects inside the European Quantum Flagship by taking part of a joint initiative called Q@TN with the University of Trento and the National Research Council aimed at coordinating their on-going activities and to start new ones in the field of Quantum Science and Technologies.

CYBERSECURITY

Cybersecurity is a key enabler in a world that is more digitally interconnected than ever before. Our research combine security techniques based on formal methods and artificial intelligence for all phases of system development with approaches derived from the humanities, economics, ethics and law. We develop security solutions for digital identity management, legal compliance, and complex eco-systems that integrate several different technologies including APIs, Cloud, Edge, and IoT. We experiment our approaches in different domains that include e-health and public administration services together with digital finance.

SMART NETWORKS

Our research is focused in the area of design, analysis, and management of Smart Networks and includes fields such as control and coordination of heterogeneous radio access networks, multi-access edge computing, lightweight management and orchestration, observable artificial intelligence for network management, connected vehicles. We study, design and implement solutions to provide secure and decentralized IoT platforms for smart devices and pervasive application and we research and develop solutions of Fog Computing, which is considered a key enabler for innovative scenarios such as smart cities and smart agriculture, Industry 4.0 and the fifth generation of mobile networks (5G).