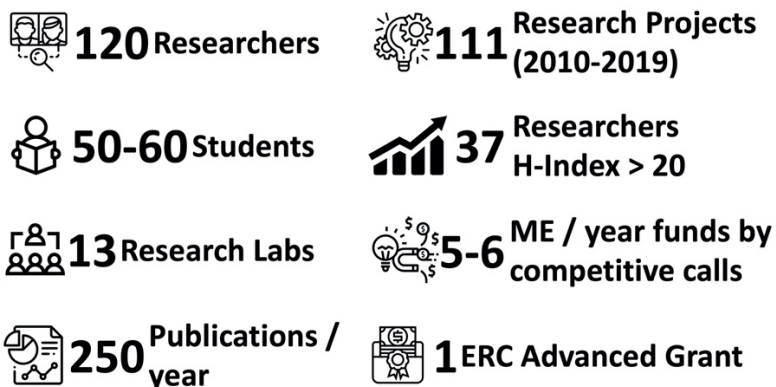


Institute of Information Science and Technologies "A. Faedo" Italian National Research Council (CNR-ISTI)

Director: Dr. Roberto Scopigno, roberto.scopigno@isti.cnr.it



Mission and activity of the Institute

CNR-ISTI is the largest CNR institute for Computer Science, with a staff of around 220 employees. ISTI is committed to produce scientific excellence and to play an active role in technology transfer. The domain of competence covers Computer Science & Technologies and a wide range of applications. The activity aims at increasing knowledge, developing and testing new ideas and widening the application areas. ISTI is actively involved in collaborations with the academic world and in cooperative research and development programs, both national and international. In addition, ISTI is strongly involved in teaching activities, at bachelor, masters and PhD levels, contributing with a variety of training initiatives in cooperation with national and international universities. The Institute also has a very solid expertise and reputation in the design and deployment of e-infrastructures and in technology transfer activities oriented towards industry or the public administration.

Most of the research activity of the Institute is developed in the context of the Engineering, ICT, Energy and Transport Technologies Department (DIITET) of CNR, some of the research activity is also developed in the framework of other CNR thematic departments, such as Human and Social Sciences-Cultural Heritage, Physical Sciences and Matter Technologies, Biomedical Sciences.

The scientific activity is organized into 6 **thematic areas** and 13 **research laboratories**, each having a wide scientific and administrative autonomy. These thematic areas, the research labs and the main research topics are reported below.

Check our newsletter **ISTI News** at <https://www.isti.cnr.it/en/isti-news> for updates on our recent activities

Thematic Area: **Networking**



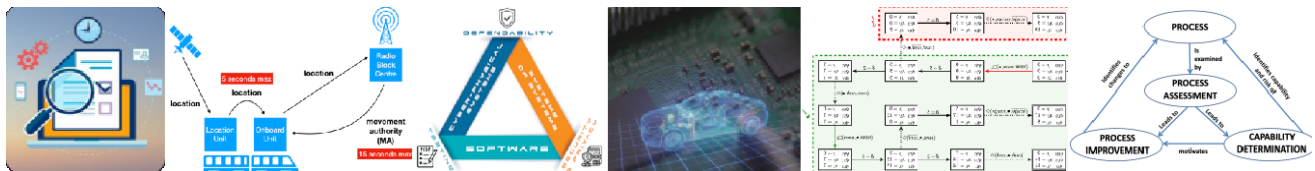
Research Lab:

Wireless Networks (WN), Head: Paolo Barsocchi, <http://wnlab.isti.cnr.it/>

Keywords:

Activity Recognition	Cyber-physical Systems of Systems	Positioning and Tracking Technologies
Ambient Assisted Living (AAL)	Communication Middleware for Context-awareness	Smart Devices and Smart Spaces
Ambient Intelligence, Smart Spaces and Green Buildings	Domotics and Home Automation	Social Models for Pervasive Systems
Architectures, Protocols, and Technologies for Pervasive Communications	Indoor Localization	Software Defined Networks
	Mobile Social Computing	Wireless Communications and Multimedia
	Opportunistic Networking and Sensing	

Thematic Area: **Software**



Research Labs:

Formal Methods and Tools (FMT), Head: Maurice ter Beek, <http://fmt.isti.cnr.it/>

Software Engineering and Dependable Computing (SEDC), Head: Felicita Di Giandomenico, <http://labsedc.isti.cnr.it>

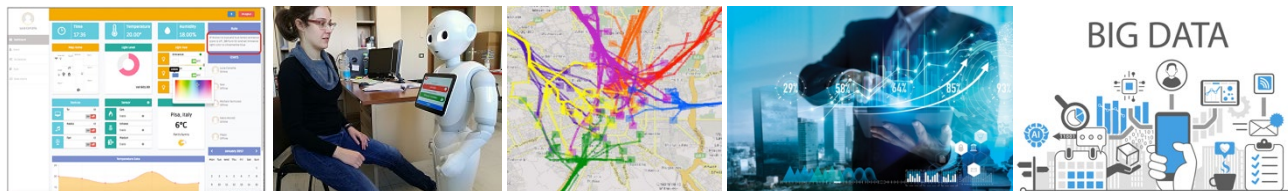
System and Software Evaluation Center (SSE), Head: Giuseppe Lami, <http://ssec.isti.cnr.it/>

Keywords:

Analysis of Resilience and Energy Consumption in Critical Infrastructures	Formal Modelling and Verification of Service-Oriented Systems	Models and Methods for Software Product Evaluation and Measurement
Analysis, Testing and Monitoring of Dynamic Systems	Formal Modelling and Verification of Spatially Distributed Systems	Requirements Engineering
Cobot Protocol Validation	Functional Safety of automotive software-based systems	Scalable Testing
Dependability Assessment and Fault-tolerant Solutions	Human Factors in Software Engineering	Software Certification
Empirical Software Engineering	Model-based E-Learning Systems	Software Process Assessment and Improvement in Automotive
Formal Approaches to Medical Image Analysis	Modeling and analysis of Railway Control Systems	Testing for Security and Privacy
Formal Approaches to Software Product Line Engineering	Quantitative Formal Methods for Collective Adaptive Systems	Testing of Systems-of-Systems
		Verification Tools and Techniques



Thematic Area: Knowledge



Research Labs:

Human Interfaces in Information Systems (HIIS), Head: Fabio Paternò, <http://hiis.isti.cnr.it>

Knowledge Discovery and Data Mining (KDD), Head: Fosca Giannotti, <https://kdd.isti.cnr.it/>

Infrastructures for Science (InfraScience), Head: Donatella Castelli, <http://infrascience.isti.cnr.it/>

AI for Media & Humanities (AIMH), Head: Giuseppe Amato, <http://aimh.isti.cnr.it/>

Keywords:

Accessibility and Assistive Technology

Artificial Intelligence and Deep Learning

Big Data Analytics, Platforms, Applications

Digital Libraries: Foundations and Systems

Digital Restoration of Ancient Documents

End User Development

Ethics-sensitive and Privacy-aware Data Mining

Explainable AI

Face Recognition and Verification

Human-Robot Interaction

Intelligent Information Systems

Mobility and Network Analytics

Multimedia Content Understanding and Information Retrieval

Open Science & FAIR Data Management

Personalization of IoT Ecosystems

Research Data Infrastructures, Virtual Research Environments

Scholarly Communication Models, Methods and Tools

Scientific Data Integration and Management

Semantic Web: Reasoning, Learning and Uncertainty

Social Sensing & Analytics

Text Mining, Classification, NLP & Transfer Learning

User Interfaces: Context-dependent, Emotion-based, Multimodal

Thematic Area: High Performance Computing



Research Lab:

High Performance Computing (HPC), Head: Raffaele Perego, <http://hpc.isti.cnr.it>

Keywords:

AI and Data Mining for Ranking, Prediction, Recommendation

Information Systems for Big Data: Indexing, Compression, Efficiency and Responsiveness

Scalable Distributed Computing for Big Data Processing and Analysis

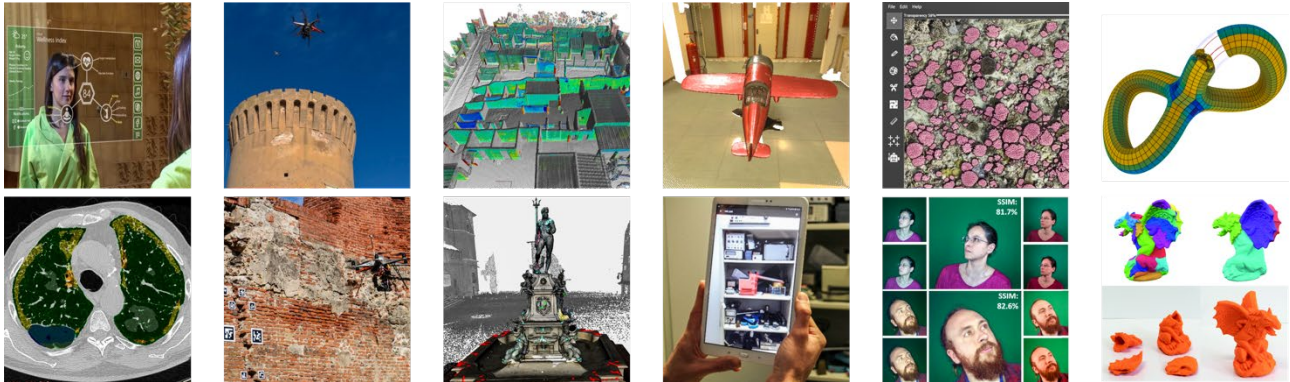
Data-driven Analytics in Distributed Edge-Cloud Systems

Cloud Computing, Cloud Federations, and Cloud Resource Management

Mobility Data Analysis and Semantic Enrichment

Knowledge Bases and Entity Linking
Social Media Analysis

Thematic Area: **Visual**



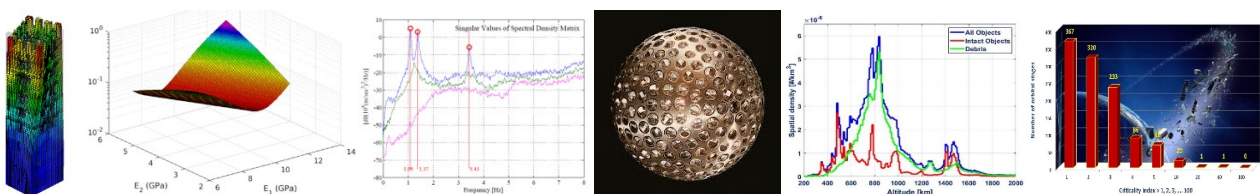
Research Labs:

Signals and Images (SI), Head: Davide Moroni, <http://si.isti.cnr.it>
Visual Computing (VC), Head: Paolo Cignoni, <http://vcg.isti.cnr.it>

Keywords:

- | | | |
|--|--|--|
| 3D Acquisition of Shape and Appearance | Artificial Intelligence & Intelligent Vision Systems | Web-based Visualization and Mobile Platforms |
| Remote Sensing and Earth Observation | Geometry Processing and 3D Shape Analysis | Virtual and Augmented Reality |
| Real Time Imaging and Embedded Systems | Architectural Geometry | Computational Biology and Physiology |
| Image Processing and Computer Vision | Interactive 3D Graphics | Computational Fabrication |
| Medical Imaging | Topological Data Analysis | Visual Computing for Cultural Heritage |
| | Scientific and Large Data Visualization | Assistive Technologies and Smart Living Environments |

Thematic Area: **Flight and Structural Mechanics**



Research Labs:

Mechanics of Materials and Structures (MMS), Head: Cristina Padovani, <http://www.nosaitaca.it/>
Space Flight Dynamics (SFD), Head: Luciano Anselmo, https://www.isti.cnr.it/Space_Flight_Dynamics_SFD

Keywords:

- | | | |
|---------------------------------|--------------------------------|------------------------------|
| Computational Solid Mechanics | Model Updating | Space Debris |
| Dynamic Identification | Orbital Analysis | Structural Health Monitoring |
| Mechanics of Masonry Structures | Satellite Re-Entry Predictions | |

Training and technology transfer

In recognition of the importance of **training** in today's Information Society, ISTI pays great attention to involving doctoral students and post-doctoral fellows in research activities and participates actively in the doctoral programs of the University of Pisa and other partner universities.

ISTI is also deeply involved in **technology transfer** activities (within several contracts with companies and institutions).

Many results of our scientific projects have produced software systems and tools, many of them have been released to the community as open source resources.

Funding

ISTI receives from CNR funds to cover the expenses of all permanent staff. All other costs (non-permanent staff, equipment, travel, etc.) are covered by funds secured by ISTI on competitive research calls, at the National and European level. ISTI has an average of 100 active projects, with an average annual funding of 5ME.

ISTI ICT Library

Founded in 1954, ISTI Library is one of the oldest ICT Libraries in Europe and among the most complete Italian libraries in the field. It gives access to both local (over 27,000 books and 2,000 serials) and remote resources. Our library supports Open Science through the provision of services and the promotion of actions regarding Open Access and Open Data. For more information: <https://library.isti.cnr.it/>

ISTI and ERCIM

The European Research Consortium for Informatics and Mathematics (ERCIM) aims to foster and facilitate scientific collaboration within the European research community and to stimulate and increase cooperation with European industry. CNR has been a member of ERCIM since 1988. ISTI currently has representatives in the Executive Committee and in the Editorial Board of the quarterly magazine ERCIM News. Visit <https://www.ercim.eu/> for additional information.

ISTI regularly hosts foreign postdoctoral researchers through ERCIM's fellowship programme.

Historical notes

The Institute of Information Science and Technologies (ISTI) is part of the Italian National Research Council (CNR). It is located in the CNR Research Campus in Pisa. ISTI was constituted in September 2000 as a result of a merger between the Istituto CNUCE (CNUCE-CNR) and the Istituto di Elaborazione dell'Informazione (IEI-CNR). ISTI is named in honor of Alessandro Faedo, former Rector of the University of Pisa and former President of CNR, in recognition of his important contribution to the advancement of Information Science and Technologies in the Italian academic communities.