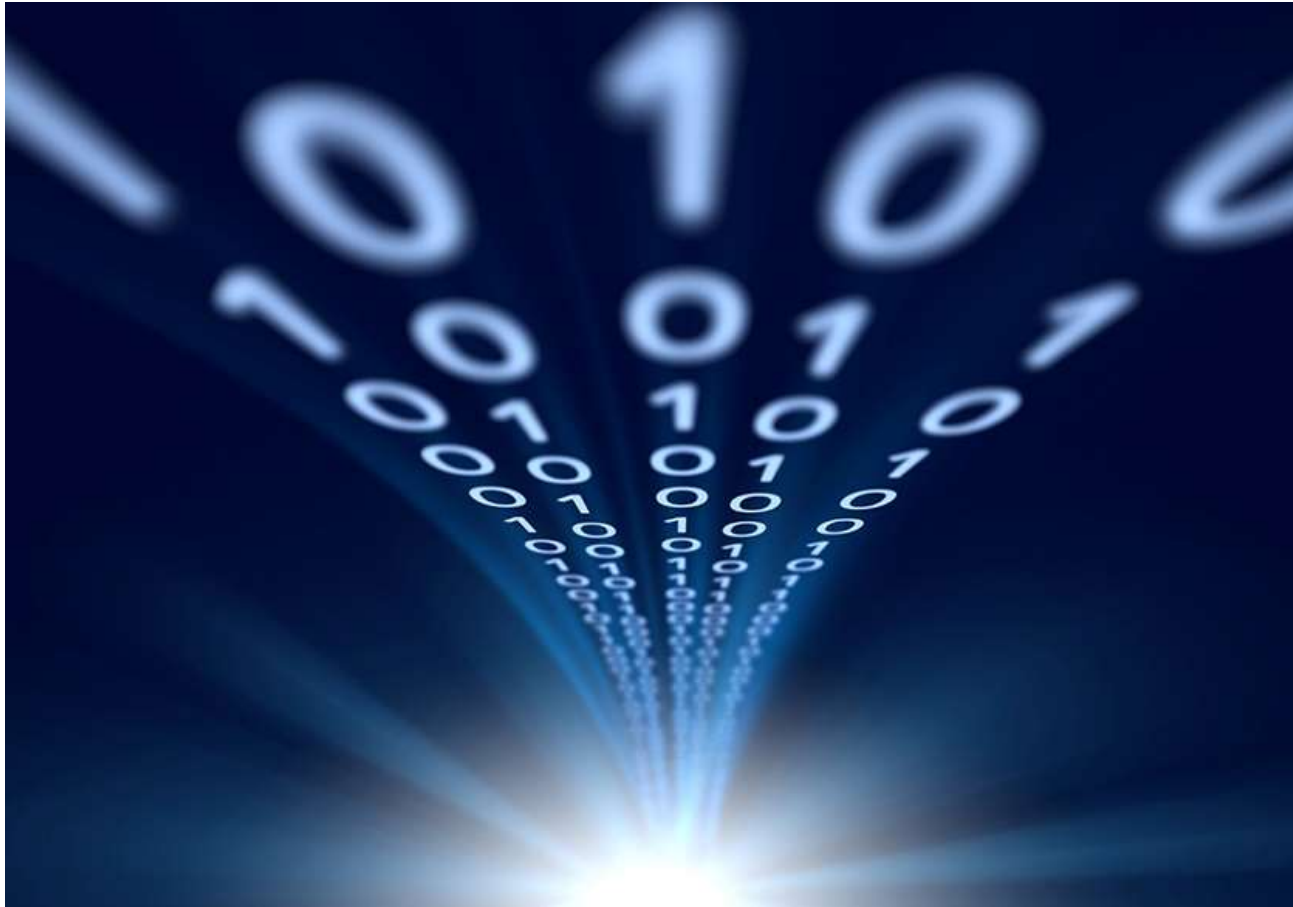


DEPARTMENT

COMPUTER SCIENCE

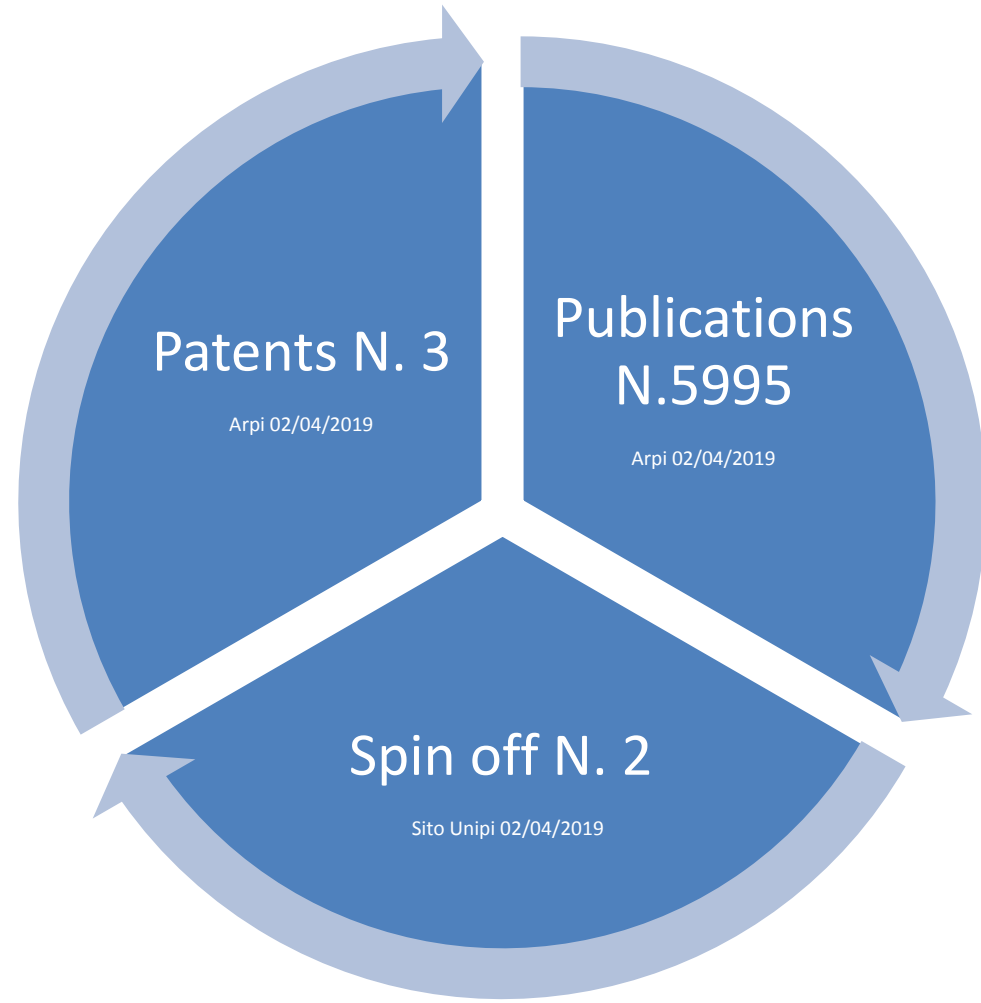
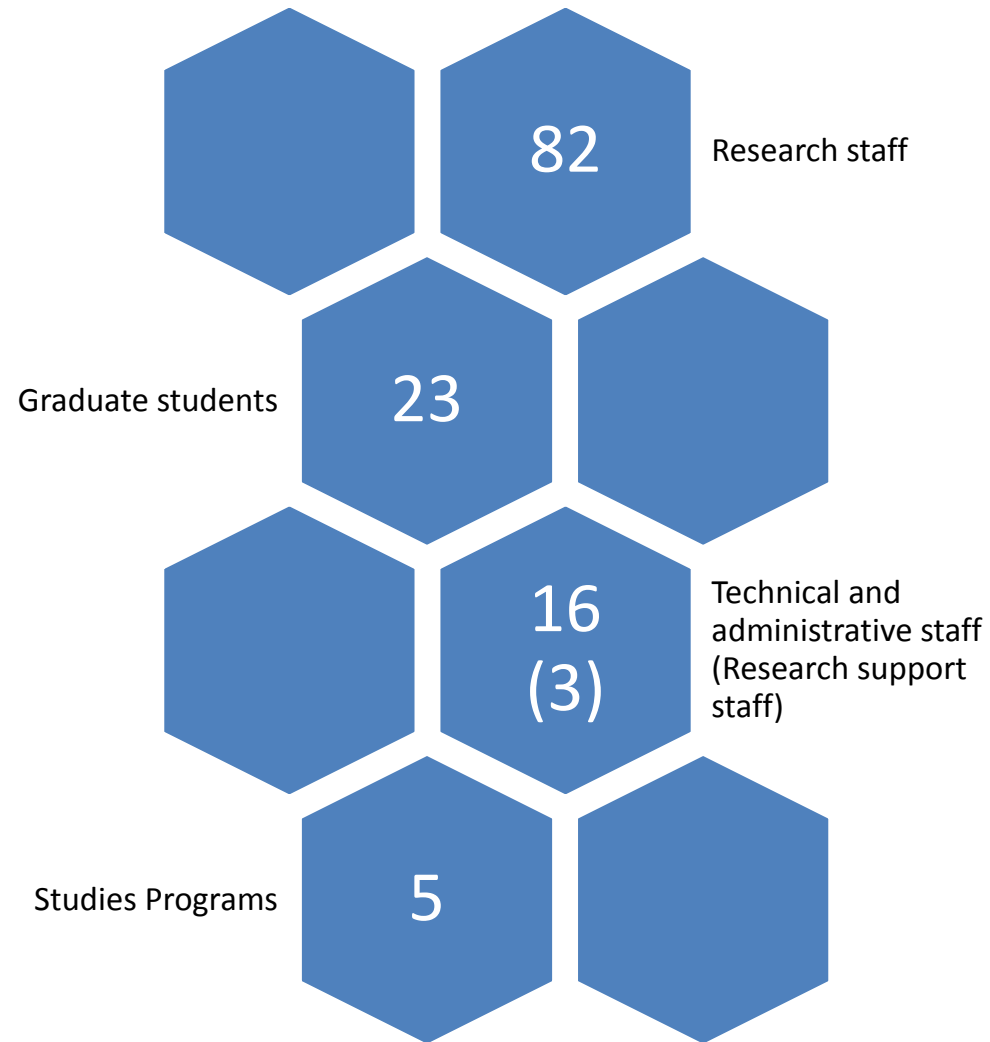


**A TRADITION OF INNOVATION:
LEADING ENVIRONMENT FOR
RESEARCH AND EDUCATION IN
COMPUTER SCIENCE IN ITALY
AND IN EUROPE**

LARGO PONTECORVO, 3 PISA



DEPARTMENT AT A GLANCE



RESEARCH AREAS

Computational sciences and applied mathematics

Computational Systems Biology; Mathematical Optimization: Methods and Applications
Applied Numerical Linear Algebra

Data, Knowledge and Learning

Data Science and Big Data; Distributed Ledgers for Social Good
Natural Language Technologies; Intelligent Cyber-physical Systems
Deep Networks and Machine Learning; Cognitive Software Engineering

Advanced Programming Models and Systems

Information Security; Formal specification and verification of distributed systems
Programming models for High Performance Computing
Service-oriented Cloud and Fog Computing
IoT Systems
Algorithmic Design and Computer Networks



RESEARCH PROJECTS



Data

- Data** is the European Research Infrastructure for Big Data and Mining. From data to knowledge, investigating stories ethically, paying attention to citizens privacy. 7 european countries, more than 100 data scientists.
- SoBigData is an H2020 Project



SPARK@UNIPI

- Spark** aims at advancing academic discoveries and innovative solution addressing health challenges through novel computational methods and tools in the field of systems medicine and pharmacology for the benefit of patients and helps the translation of these results through education and project management best practices.



Helios

- HELIOS** will create a decentralized social media platform that will address the dynamic nature of human communications in three dimensions: contextual, spatial and temporal. This platform provides an extension for mobile operating systems (focus on Android), providing easy-to-apply peer-to-peer social media functionality for 3rd party developers.
- Helios is an H2020 Project.



Plan4res

- Plan4res** develops innovative optimization tools to support the main stakeholders of the European energy system (TSOs, DSOs, Utilities, Energy providers...) by helping them taking better decisions regarding the development and operation of their energy portfolio, also considering the emerging technologies and innovative flexibility sources while maintaining a high level of reliability..
- Plan4res is an H2020 Project

RESEARCH IMPACT AND PUBLIC ENGAGEMENTS



Projects and Relationships (2015-18)

- 13 EU Projects
- 15 National Projects
- 40+ Projects in collaborations with national and international companies
- Training on the job (stages): **281+** collaborations



Museum of Computing Machinery (Pisa)

- The Museum's mission is to play a leading role in exploring the relationship between science, computer science and software technology



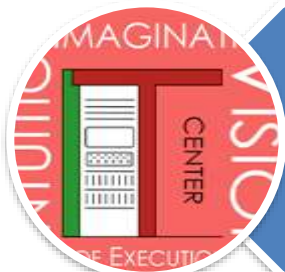
Healthcare

- Novel computational methods and tools in the field of systems medicine and pharmacology
- IoT Intelligent infrastructures to support, monitor and assist elderly/disabled in their homes and at work



National & International Engagements

- Patents and research results are exploited by national and international companies including ICT over the top companies



IT-Center Stories

- Unconventional applications of Intel® Xeon Phi™ Processor (KNL)
- Using memory mapping to program Intel® Optane™ SSD drives
- IT Center has deployed Intel HPC Orchestrator



INTERNET FESTIVAL

- Promote active citizenship informed by the world of computer science and technology
- Inspire lifelong appreciation of the importance and impact of computer science