



Founded in 1997, LORIA is a joint research unit (UMR7503) under the supervisory authority of CNRS, Inria and the Université de Lorraine, located at the Faculty of Sciences and Technologies of Vandoeuvre-lès-Nancy and CentraleSupélec Metz Campus. Since its creation, LORIA has worked on fundamental and applied research in computer science. LORIA is member of the Fédération Charles Hermite which regroups research laboratories in Mathematics and Computer Science Research in Lorraine. LORIA belongs to the scientific cluster AM2I (Automatics, Mathematics, Computer Science and Interactions) and is one of the largest laboratories of the Grand Est Region.

Research work is conducted by 5 departments and 28 teams, around 7 cross-cutting axes:

Research departments

- **Algorithms, Computation, Image and Geometry** (ABC, Adagio, Caramba, Gamble, Magrit, MFX, Pixel, Tangram teams)
- **Formal methods** (Carbone, Mocqua, Mosel-Veridis, Pesto, Types teams): proofs, software validation and certification
- **Networks, Systems and Services** (Coast, Optimist, Resist, Simbiot teams): integrative approach for design, modelling, engineering, and assessment of robust and safe cyberphysical systems
- **Natural Language Processing and knowledge discovery** (K team, Multi-speech, Orpailleur, Semagramme, SMarT, Synalp teams): data mining, machine learning, visualization, clustering
- **Complex Systems, artificial Intelligence and robotics** (Bird, Biscuit, Capsid, Larsen, NeuroRhythms teams): autonomous systems, machine learning, artificial intelligence.

Cross-cutting axes

- ROBOTICS AND CYBER-PHYSICAL SYSTEMS
- CYBERSECURITY
- HEALTH
- E-EDUCATION
- AUTOMATIC LANGUAGE PROCESSING AND ARTIFICIAL INTELLIGENCE
- ENERGY
- FACTORY AUTOMATION

Application Domains

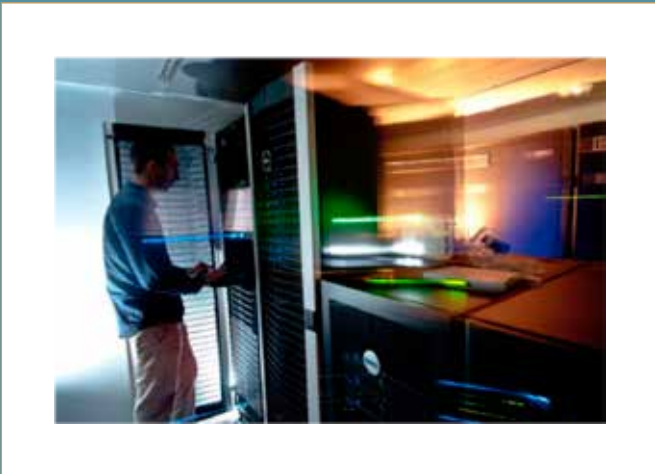
Artificial intelligence, Natural Language Processing, Cybersecurity, Robotics, cyber-physical systems, health, education, energy, factory automation, Industrial systems (aerospace, construction, energy, transportation); environment (plants, hydrology, landscapes, acoustics); life sciences (medicine, molecular biology, genetics, epidemiology); markets and companies (finance, capital markets, business intelligence); information technology and networks (internet, multimedia, knowledge management).

HIGHLIGHTS 2022

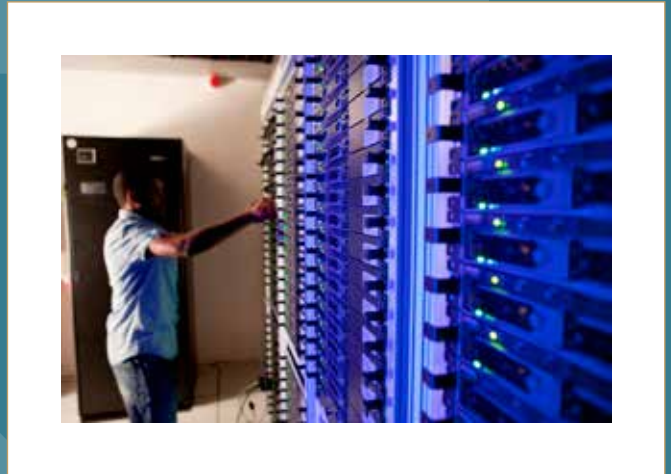
- Two CNRS Silver Medals in 2022: **Claire GARDENT** and **Véronique CORTIER**
- **PEPR**: Cybersecurity, Quantum Computing, Robotics...
- **Robotics**: a new algorithm for speeding up processing times
- **SIGGRAPH 2021**:
 - 50 lines of code to revolutionize 3D modeling
 - the secrets of perspective revealed by computer vision
- A 40K Euros bug bounty for the **PESTO** and **CARAMBA** teams
- After 5 centuries of mystery, our researchers decipher an encrypted letter from Charles V
- **EXOTURN** - Exoskeletons to relieve caregivers during COVID19
- Creation of the **CYBI** startup
- **Cybersecurity**: creation of a common laboratory with WALLIX
- **LOLA**: an open environment for Learning Analytics, supported by the French Ministry of National Education and Youth



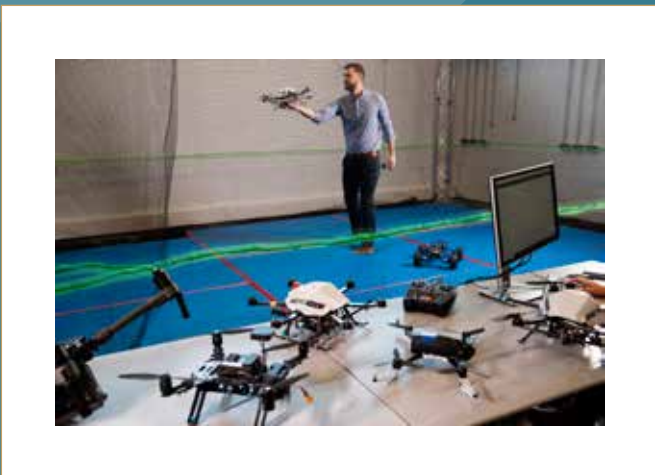
Intelligent Apartment (Nancy) and Smart Room (Metz)



High Security Laboratory



A Grid5000 node



*Creativ'Lab
Crédit photo Inria, D. Betzinger*



Industrial Partners

- ANTSWAY,
- ATOS BULL,
- CYBER-DETECT
- EDF,
- FACEBOOK,
- HARMONIC PHARMA,
- LINAGORA,
- LYBERO.NET,
- ORANGE,
- SCYTL,
- TESSAEL,
- WALLIX.

Academic Partners

Inrae, CHRU de Nancy, Kyutech University, Université de Rabat, JAIST, CISPA, Université Fédérale de Rio Grande Do Norte...


Key figures*

- Professors, Associate Professors & Researchers 12
- PhD Students 4
- Publications of the year (WoS) 5

*CentraleSupélec only


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