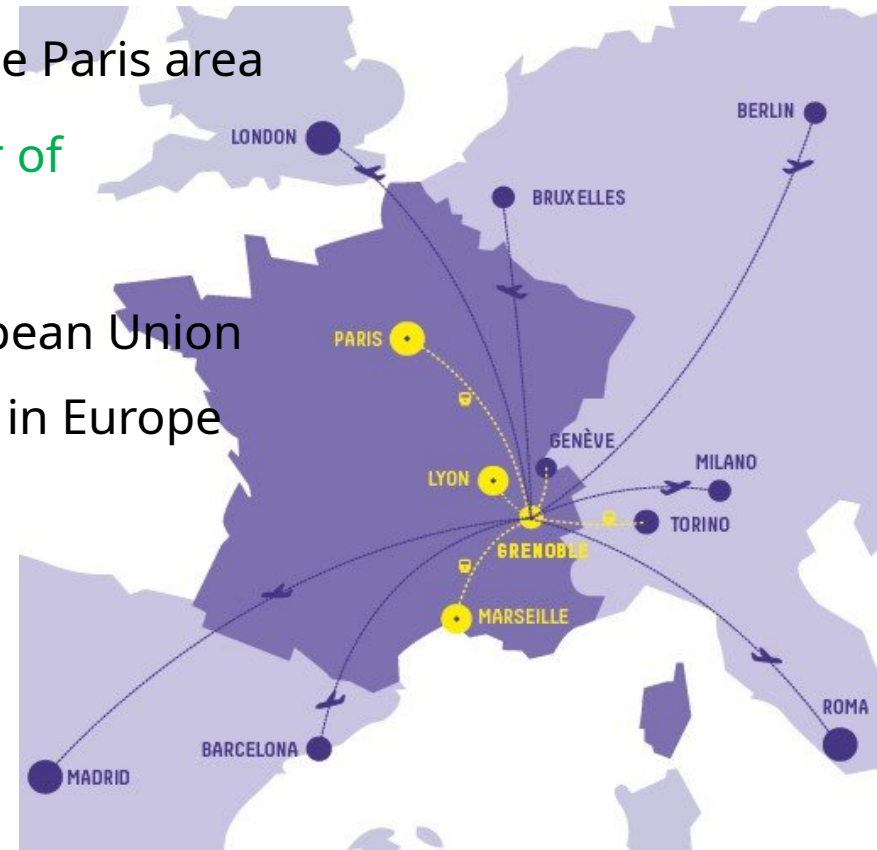


Master MOSIG
Meeting with L3 students
Sept, 2024
Grégory Mounié, Thomas Ropars



Grenoble in the heart of Auvergne-Rhône-Alpes

- 2nd **largest regional** economy after the Paris area
- 4th position in Europe for the **number of researchers**
- 7th largest **regional economy** in European Union
- Among the top five **travel destinations** in Europe
- 500 000 inhabitants, 20th of France



National Research Organizations

CEA, Atomic Energy Commission

Research areas: energy, defense and security, information technologies and health technologies

CNRS, National Centre for Scientific Research

INRIA, National research institute for digital sciences

INSERM, National Institute of Healthcare and Medical Research

IRSTEA, National Research Institute for Environment and Agriculture

INRA, National Institute of Agronomic Research

International Research Centres

ESRF, European Synchrotron Radiation Facility

ILL, Institut Laüe-Langevin, Neutron-flux reactor

IRAM, Millimetric Radio-Astronomy Institute

EMBL, European Molecular Biology Laboratory

GHMFL, Grenoble High Magnetic Field Laboratory

25 000 jobs among which 15 000 in public academic research, and 90 research laboratories



3 700 PhD students, of which 45% international (400 in CS and Applied Math. + PhD in Signal Processing + PhD in OR)

Software Systems and High Quality Components Engineering

Test, verification and proofs for correctness, safety, security (ORCO)
 Embedded systems: from high-confidence design to safe execution

Advanced software modeling and engineering

Process engineering

Distributed computing: from cloud to edge computing, embedded systems and networking

Advanced networking

Virtualization, cloud, micro-services

Advanced parallel system

System design: concurrency, real-time, stochastics, and analog/digital (1/2 mutualisée avec 3A - Ensimag)

Data science and Artificial intelligence

ML Fundamentals * (AM)

Reinforcement Learning * (AM)

Fundamentals of Data Processing and Distributed Knowledge *

Large scale Data Management *
 Distributed Systems

Multiagent systems

Information Visualization *

Adv. Algo. in ML and DM * (AM)

Info. Retrieval & Access

Knowledge Representation and Reasoning *

Scientific Methodology
 Regulatory and ethical usage *

Natural Language Processing

Deep Learning for Image&Texte proc *

Artificial Intelligence for Graphics, Interaction, Vision and Robotics

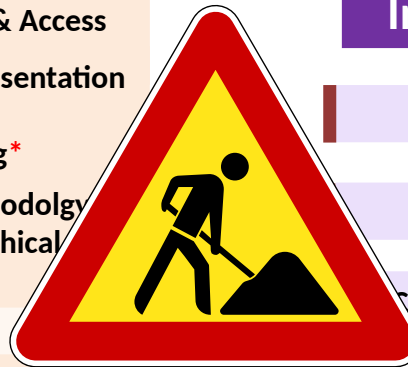
Robotics

Vision

Computer graphics

Human in the Loop
 Human Capabilities for computing
 Methods to bring the HiL

Augmented and virtual reality: innovative interaction techniques



Total : 126 ECTS

MOSIG : Master of Science in Informatics at Grenoble

- 2-year program (~40 seats M1, 100 seats M2, most Ensimag enter directly in 2nd year, explanations later)
- Areas (broad foundations in M1, one major track in M2) :
 - Data science and artificial intelligence (DSAI)
 - Distributed computing from cloud to edge computing, embedded systems and networking (DC)
 - **Artificial Intelligence for Graphics, Interaction, Vision and Robotics (AI4GIVR)**
 - Software and hardware components engineering: quality, engineering, models of computation (SHCE)

CySec : 2nd year of Master in Cybersecurity

ORCO : 2nd year of Master In Operations Research, Combinatorics & Optimization

AI : 2nd year of Master in Artificial Intelligence (from DSAI+AI4GVR, starting probably next year, before full AI Master)

PROGRAMME OVERVIEW

(Fully taught in english)

- ▶ **M1 Semester 1:** 30 ECTS. Core Courses (*Similar to M1 Info*)
 - ▶ + programming project (January) (*Compil ou bien OS*)
 - ▶ + English language & writing course (mandatory)
 - ▶ + French language course (optional)

- ▶ **M1 Semester 2:** 30 ECTS. (1 mandatory and 7 among 14 *elective courses*)
 - ▶ Elective Courses: Networks, Intelligent Systems, 3D Graphics, Robotics, Cryptography, parallel Algorithms, Operational research, theoretical CS,...
 - ▶ + an *internship (research project)*