STUDY AT EURECOM

EXIT UNIVERSITY of the AUS Master Program

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International Relations Manager
KEY FACTS ABOUT EURECOM

300 Master students
75 PhD students
25 Professors

3 Main fields of research and teaching
Data Science
Digital Security
Communication Systems

A consortium of
9 universities
and
6 companies

300 Days of sun on the French Riviera
EURECOM is part of a Brand New Campus called SophiaTech and benefits from cutting-edge facilities.
Where do EURECOM students live?

- Antibes: 48%
- Biot / Valbonne: 32%
- Nice: 5%
- Others: 15%
EUROPEAN SILICON VALLEY

EURECOM is located in the heart of SOPHIA ANTIPOLIS

One of the largest techno-parks in Europe

Some of the top companies offering internship opportunities to our Master & Post Master students:

SAP, BMW, monaco telecom, Symantec, IABG, Thales, Symantec, IBM, HP, THALES, Renault, Alcatel-Lucent, Amadeus, Software Labs, Siemens, arm, Fortinet, Hitachi, INSTITUT CARNOT

DLR, NXP, Magneti Marelli, PSA, KMPG, Delivery Hero Germany, Technicolor, HP, Nokia, CEA, Accenture

60% of EURECOM’s Graduates currently work in Sophia Antipolis
Diversity is not the exception: it’s the norm!
EURECOM is offering a 2nd year specialisation in Sensing, Communicating and Processing Big Data for Autonomous Systems

This specialisation aims at describing the methods and tools to process and analyse data from sensors (big data integration, semantic interoperability, data mining and analytics) and at understanding the communication mechanisms adapted to the sensors’ constraints (low energy consumption, limited computing capacities, etc.).

Consequently, this master specialisation is at the crossroad between communication systems and data science skills.
DESCRIPTION

Compulsory courses 8 ECTS

**Mobility Modeling** 3 ECTS

Select one of the following courses:

- **Machine Learning and Intelligent System** 5 ECTS
- **Mobile Communication Systems** 5 ECTS

Elective courses 8 ECTS

- **Distributed Systems and Cloud Computing** 5 ECTS
- **Computer architecture** 5 ECTS
- **Mobile application and services** 5 ECTS
- **System and Network Security** 5 ECTS
- **Standardization activities** 3 ECTS
- **Designing embedded systems with UML** 3 ECTS
- **Interaction Design and Development of Modern Web Applications** 3 ECTS

Compulsory I&E Courses 7 ECTS

- **French** or another foreign language for French speakers 1 ECTS
- **Semester project** 6 ECTS
- **Master thesis** 30 ECTS
**INNOVATIVE LEARNING METHODS**

- Main developer of a dedicated (GPU)-cloud platform to perform analytics on demand: [https://zoe-analytics.eu/](https://zoe-analytics.eu/)

- Use of cutting-edge software for Data Science: Jupyter, Collab, ...

- Founder of OpenAir Interface, the 1st 5G software alliance for Wireless innovation: [https://www.openairinterface.org/](https://www.openairinterface.org/)
HANDS-ON APPROACH

- Balanced approach between theoretical input and practical application (Labs, Challenges..)
- Guest Speakers from the Industry
- Semester long projects on relevant industrial topics
- Visits in nearby companies and introduction to new technologies
Innovative projects in AUS and Machine learning
### SEMESTER PROJECTS

**Project Descriptions available on intranet**

- One or two students per project
- Talk to supervisors to discuss the topics (or in advance to propose new ones)

<table>
<thead>
<tr>
<th>Approximate clustering algorithms for DNA data storage</th>
<th>Automated code generation for IoTs</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEC LORA Service for IOT at the Edge</td>
<td>Automated code generation for IoTs</td>
</tr>
<tr>
<td>The Million Song Dataset - Content Prefetching for Personalized Radio (Data Analysis and Algorithm)</td>
<td>Machine learning for predicting user content</td>
</tr>
<tr>
<td>Exploring Graph-Based Technologies (RDF, EasierRDF, GraphQL) and Developing an Object Modeling Framework for RDF in Node.js</td>
<td>Flying Robots for Future Wireless Networks Beyond 5G</td>
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<tr>
<td></td>
<td>Exploring MEC for V2X applications</td>
</tr>
<tr>
<td></td>
<td>The Million Song Dataset - Content Prefetching for Personalized Radio (Data Analysis and Algorithm)</td>
</tr>
<tr>
<td></td>
<td>Methodology approach to Machine Learning-based Cognitive Network &amp; Management in Virtualized Multi-Tenant 5G Networks</td>
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</tbody>
</table>
MASTER THESIS

- Minimum 22 weeks (March to August)
- Where:
  - Industrial Company
  - R&D Lab (recommended for a follow-up PhD)
- How:
  - EURECOM provides support for mailing and contacts
  - Students are also encouraged to search for a placement on their own
- Defense at EURECOM in front of a jury
  (one academic + one external expert)
MASTER THESIS OPPORTUNITIES (1)

- Master’s programs include a **paid 6-month internship (master’s thesis)** in a hi-tech company or lab - a unique industrial exposure and competitive asset on the job market!
- EURECOM gives students access to its **database of internship opportunities** in prominent companies both in France and Abroad.

**Example of internships (Places and Topics)**

<table>
<thead>
<tr>
<th>Company</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFD Technology</td>
<td>International GSM Roaming</td>
</tr>
<tr>
<td>ALCMEON</td>
<td>crawl, and large-scale processing of UGC (User Generated Content)</td>
</tr>
<tr>
<td>AMADEUS</td>
<td>iPhone application for online flights shopping</td>
</tr>
<tr>
<td>ATOS</td>
<td>Network security</td>
</tr>
<tr>
<td>BMW</td>
<td>Security analysis and specifications of the fedust protocol</td>
</tr>
<tr>
<td>CISCO Systems Inc.</td>
<td>Router's Penetration Testing</td>
</tr>
<tr>
<td>Commsquare</td>
<td>Protocol Analysis in IP Mobile Networks</td>
</tr>
<tr>
<td>EUREVA</td>
<td>Developing a Cloud-Computing visualization solution</td>
</tr>
<tr>
<td>NOKIA</td>
<td>TCP Response to Lower-Layer Connectivity-Change Indications</td>
</tr>
<tr>
<td>ORANGE</td>
<td>Practical Network security applications in a network provider environment</td>
</tr>
<tr>
<td>PHILIPS ELECTRONICS</td>
<td>Study of the influence of NAT in triple play networks</td>
</tr>
<tr>
<td>SAP</td>
<td>Security mechanisms for the Internet of Services</td>
</tr>
<tr>
<td>SecludIT</td>
<td>Security Audit in cloud infrastructures</td>
</tr>
<tr>
<td>ST MICROELECTRONICS</td>
<td>Evaluate the feasibility of particular kinds of multi-fault attacks against RSA</td>
</tr>
<tr>
<td>SWISSCOM Innovations</td>
<td>Network access control</td>
</tr>
<tr>
<td>TECHNICOLOR</td>
<td>Design and evaluation of a hybrid cloud for dynamic workloads</td>
</tr>
<tr>
<td>THALES ALENIA SPACE</td>
<td>network access control with port based security</td>
</tr>
</tbody>
</table>
EURECOM provides students with a database of Master’s thesis opportunities based on internships in labs and companies in France and abroad.
EURECOM students can browse a database of several hundreds of offers, fueled by the efficiency of its network of partners and relationships with local, national and international companies.

Some of the top companies offering internship opportunities to our Master & Post Master students:

- SAP
- BMW
- monaco telekom
- IABG
- amadeus
- SOFTWARE LABS
- SIEMENS
- arm
- DLR, NXP, Magneti Marelli, PSA, KMPG, Delivery Hero Germany, Technicolor, HP, Nokia, CEA, Accenture
- NVIDIA
- IBM
- HITACHI
- Alcatel-Lucent
- RENAULT
- THALES
EMPLOYABLE MASTER in BOOMING FIELD

EIT DIGITAL Student will obtain our **MASTER IN INTERNET OF THINGS**

Our Master's programs ("Diplôme National de Master") are fully accredited by the French State and co-delivered by the Institut Mines Télécom, French leading consortium of the best French engineering schools.

Master obtained **the Carrière IA certification**

[Logo]

Certifié © Carrière IA - Emplois IA & Data Science

[Logo]
WHY EURECOM?

A very strong Data Science Department

**MICHIARDI, Pietro (Head)**
Scalable Machine Learning Algorithms
Computational Statistics
Parallel and Distributed Systems

**FILIPPONE, Maurizio**
Development of practical and scalable Bayesian inference methods for Gaussian Process-based statistical models.
Statistical methods for early stage diagnosis of neurological disorders based on neuroimaging data.
Bayesian inference in mechanistic models applied to systems biology.

**Motonobu KANAGAWA**
Kernel methods and Gaussian processes in machine learning, statistics and numerical computation
Machine learning for enhancing the power of computer simulation
Applications to real-world problems involving computer simulation models

**Raja APPUSWAMY**
Big data analytics
Data management on modern hardware

**PAPOTTI, Paolo**
User-centric data cleaning
Automatic fact-checking

**TRONCY, Raphaël**
Multimedia semantics and multimedia interlinking for hypervideos, Semantic Data Integration for smart cities and knowledge bases population

**Maria ZULUAGA**
Machine and statistical learning, image analysis and computer vision, time-series analysis, healthcare
Worldwide reference in Communication Systems (5G)

GESBERT, David (Head)
Communications and information theory for wireless networks
High spectra efficiency techniques for 5G networks
Distributed algorithms in cooperative wireless networks
Cognitive radio

GESBERT, David (Head)
Communications and information theory for wireless networks
High spectra efficiency techniques for 5G networks
Distributed algorithms in cooperative wireless networks
Cognitive radio

ELIA, Petros
Information theoretic limits and coding in cooperative communications, fundamental performance-complexity limits in communications, MIMO decoders, two-way relaying, isolation and connectivity in dense networks, queueing theory, crosslayer design, and soft-biometrics.

Marios KOUNTOURIS
Communication theory
Machine learning for wireless communications
Low latency networking
Stochastic modeling and performance analysis

SPYROPOULOS, Thrasyvoulos
Performance Analysis and Modeling
Mobile Data Offloading
Small Cell Networks
Distributed Caching
Cognitive Networks
Delay Tolerant Networks
Mobility Modeling
Intelligent Transportation Systems
Social Networks
Traffic Classification

SLOCK, Dirk
Transmitter and receiver design for 4G/5G systems, with multiple antennas / users / cells, relaying; capacity and diversity analysis, interference management, cognitive radio, localization
Audio signal processing: acoustic echo cancelation, dereverberation, source separation, enhancement
Joint Wiener filtering and parameter estimation, empirical Bayes estimation, Variational Bayesian techniques
KALTENBERGER, Florian

Multi-user MIMO and relaying techniques and their implementation on the OpenAirInterface.org platform
- Interference management and mitigation
- Physical layer abstraction for large-scale system simulations

KNOPP, Raymond

Specific subjects investigated by the group include coding, multiple access and two-way transmission techniques in radio communications, software radio architectures and implementation technology, and physical-layer abstraction and emulation architectures for radio networks.

KSENTINI, Adlen

- Mobile and wireless Networks
- Software Defined Networking (SDN)
- Network Function Virtualization (NFV)
- Content Delivery Networks (CDN)
- Performances evaluation

NIKAEIN, Navid

- Uplink channel access techniques for mix machines/human traffic in LTE/LTE-A systems
- Scheduling schemes applicable to evolving cellular systems as well as adhoc/mesh network
- Large scale wireless network emulation architectures and HW/SW CPU/GPU co-design
- Experimentation and performance evaluation in LTE/LTE-A using OpenAirInterface.org

HÄRRI, Jérôme

- Mobility modeling and context prediction of autonomous/manual vehicles and vulnerable road users
- Cooperative congestion & awareness control
- Connectivity and graph properties of vehicular networks
- Enhancement of positioning systems for transport-related applications
- Benefit of vehicular communication and ITS (Intelligent Transportation Systems) on traffic efficiency, traffic safety and transport automations
WHY EURECOM?
ENHANCED EMPLOYABILITY

- Balanced Approach between Theoretical courses and Supervised sessions in labs.
- Guest Speakers from the Industry
- Semester Long Projects on relevant topics
- Very strong ties with major actors in industry, not only in Sophia but in the whole world

- 6-month Paid Master Thesis in a company or lab
EURECOM provides students with an updated Database of internship opportunities

Average monthly allowance: 1200€/month

Some of the companies offering internship opportunities

- Amadeus
- NXP
- Nokia
- ARM
- Renault
- SAP
- Dassault Systems
- Fortinet
- Orange
INDIVIDUAL ASSISTANCE

- Human-size school: Accessible professors and staff
- Favorable professor/students ratio
- A whole team dedicated to student’s administrative life
  - Administrative assistance: Health insurance, housing, bank account…
  - Help to find a flat and an internship

EURECOM Student Affairs Team
A 3-week Intensive program of French language and cultural visits organised in September

Included in the program (Free of charge for Exchange Students)

Weekly French courses throughout the academic year
EURECOM has a very active Student’s association organises many events all year long to fully enjoy your stay in France.

- Weekend of Integration
- International Meal
- International Study trip
- Ski Weekend
- Many sport activities
- Graduation and Alumni Events
STUDENT ACTIVITIES

EURECOM’s localization allows our students to enjoy culture, sports and discovery.

60 km from Italy

Gateway to main European Cities with low cost flights

Fine Arts

Like the cinema? Enjoy the Festival de Cannes
FANCY LIVING IN A VILLA?
1h30 from the sky slopes
30 min the beach
Hi all, my name is Helen and I spent my second year of the EIT master in security and privacy at EURECOM in the sunny South of France.

After an very intensive first year at the University of Twente in the Netherlands, I moved to France in August. Already months before I got lots of help from the great administrative team of EURECOM concerning all aspects of moving: finding a flat, insurances, bank accounts, etc.

Many thanks to Gwenaëlle, Philippe, and all the others! You’re amazing!

In September, we were offered a free language course to get started with French while having the time to explore a bit the beaches and the mountains, and to meet the other students. It was a great time.

My two favourite courses were BigSec and MobiSec. The professors are extremely passionate, and the material is based on recent research accompanied by interesting practical challenges.

But my personal highlight of the semester was the semester project were we could support professors and PhD students with recent research and explore (+ solve) highly relevant problems that can even end in a publication.

Finally, EURECOM has a great database for finding internships which makes it very easy to get into contact with companies for the master thesis.

To conclude, I enjoyed my time at EURECOM a lot and I am extremely thankful for all the help and support I got there. Many thanks :)

HELEN
EIT student
2018/1019
“My experience at EURECOM was awesome!

Everything started from the early moments I entered the university before the actual courses. I went there to finalize some bureaucratic stuff and immediately realized two things: the first one is the location that was so beautiful, surrounded by the woods and completely isolated from the traffic of the city and the second one is the great help I received from the EURECOM staff.

They are kind, funny and always with a prompt response, and I never had an issue that they couldn't resolve.

Professors are really competent and I found an environment that pushed me hard into my studies, motivating me to do my best.

Another great thing about EURECOM is that it is small and you start knowing all the other students from the early moments, especially if you join all the awesome activities that they organize. You feel you are more in a big family rather than in a public institution.

If this is not enough, I should mention that the weather is always sunny there and you can enjoy a very beautiful see in the weekend.

In conclusion, EURECOM is a perfect match between what you can learn and what you can do, that combines together the competence of its professors and the entertainment of the location. »
I am happy to give a few sentences about EURECOM because I was very satisfied with the courses.

"EURECOM offered the best courses I had done so far: good lectures, great hands-on approach for labs and support from professors when in doubt“

Best,

Lauri Laatu
CONTACT DETAILS

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Administrative Coordinator AUS
Philippe Benassi (philippe.benassi@eurecom.fr)

Link to the Data Science Department
www.eurecom.fr/en