DATA SCIENCE AND ENGINEERING
MASTER OF SCIENCE

ACCREDITATION
National Accreditation by the French Ministry of Education, Higher Education and Research.
The degree can lead to enrollment in a Phd program.

KEY WORDS
Big Data, Data Science, Machine Learning, Data Mining, Deep Learning, Business Intelligence, Web Science, Artificial Intelligence.

STRONG POINTS OF THE PROGRAM
> The teaching program benefits from a unique location and from the expertise of renowned industrial partners.
> EURECOM is located in Sophia Antipolis, Europe's largest technology park, a hotbed of internships and jobs opportunities for students.
> EURECOM is a consortium of leading international universities and top ICT companies and has established a synergy with the local industrial environment on advanced research topics.
> During their Master, students will have access to cutting-edge technological platforms within EURECOM's Wireless Communications Laboratory.
> Students are supervised by internationally renowned researchers.
> A 6-month paid internship which provides a cutting-edge experience. EURECOM has its own database of internship offers in several countries.
> A fully dedicated team providing administrative support to international students
> A strong international exposure providing essential intercultural tools (only school in France with 2/3 of international students and professors)

SCHOOL OFFERING THE MASTER
EURECOM, a «Grande Ecole» with a 100% curriculum in English. It is located on the French Riviera, between Nice and Cannes. The degree is co accredited by IMT (Institut Mines-Télécom).

INDUSTRIAL PARTNERS
BMW Group, IABG, Orange, Monaco Telecom, SAP, Symantec.

LANGUAGE OF TEACHING
100% teaching in English. French is taught as a foreign language throughout the program. A 3-week program of intensive French language courses is organised in September.

ENVIRONMENT
The «Big Data» phenomenon is rooted in the field of data science and engineering, which aims at developing both computer and mathematical tools for data storage, processing and analytics. An increasing volume of data is daily produced by modern day industrial processes (in fields such as energy, intelligent transport systems, health, tourism and many others...), and fuelled by the rise of multimedia content being shared and the Internet of Things in our daily life. Artificial Intelligence is now empowering applications which requires large scale and smart processing of data to build accurate predictive models.
The master in Data Science and Engineering aims at combining computer and statistical sciences to develop cutting-edge and fundamental tools to efficiently address data processing problems. Beyond its importance in scientific research and industry, data analysis helps develop methods, algorithms and software able to extract value out of huge masses of heterogonous data with several dimensions.

The curriculum offers a cohesive blend of technical classes in data mining, software engineering, distributed systems coupled with fundamentals in Business, Innovation and Project Management to develop profiles which are highly valued by corporate recruiters.

COMPETENCES ACQUIRED
> Provide the theoretical background and the applied know-how to manage and improve large-scale distributed systems
> Acquire tools and methods to develop algorithms of data analysis and conceive data storage and processing systems.
> Develop an in-depth understanding of the fundamentals in other relevant fields such as: image and speech processing, semantic Web Technologies; communications and computer security...
> Acquire managerial knowledge to provide and lead innovation in Business Intelligence and Data Analytics(Project Management, Organization, innovation management...)
> Get an Introduction to advanced research topics

PROGRAM
The Master's program is a full-time program made of 3 semesters of courses followed by a 6-month Msc thesis in industry or in a research lab.

Scientific and technical modules
> Database Management System Implementation
> Machine Learning and Intelligent System
> System and Network Security
> Distributed systems and cloud computing
> Introduction to statistical learning
> Operating systems
> Fundamentals of Optimization
> Mathematical methods for engineers
> Algorithmic machine learning and data mining
> Advanced Statistical Inference
> Modern computer architectures
> Secure Communications
> Introduction to semantic Web Technologies
> Speech and Audio processing
> Cyber crime and Computer forensic
> Distributed software and middleware
> Software development methodologies
> Information theory
> Mobile application and services
> Human Machine Interaction for the Web

Soft skills / management modules
> Introduction to Management
> Personal Development and new product development
> Entrepreneurship and Capital Venture
> Innovation and product development
> Intellectual property Law
> Sustainable ICTs
> Business Simulation
> Sociological approaches of Telecom
> Technologies
> General Introduction to Law: contracts, setting up business
> Project Management

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Also part of the program
> Company visits and seminars
> Scientific and Technical Projects
> French language
> Professional coaching (workshops on CV/professional interviews)
> 6-month thesis in Industry or Research lab

ADMISSION REQUIREMENTS
> a Bachelor's degree (3 years min) in the engineering fields covered by the Master's program (Electrical engineering / computer sciences / communication engineering…).
> B2 level in English

LANGUAGE REQUIREMENTS
English (at least one of the following)
> Mother tongue;
> English Language Qualification
  – TOEFL 564 (PBT), 213 (CBT), 80 (IBT)
  – IELTS: 5.5
  – TOEIC: 750
  – Cambridge CAE

TYPICAL JOBS
The Master in Data Science and Engineering opens to a wide array of industries and business domains (client relation management, logistics, production, finance, marketing...).
The need for trained specialists in Big Data is constantly growing as shown by recent studies and results in very good employment prospects for future graduates.
Some of the targeted fields:
> Retail
> Finances and banking
> Manufacturers (car, aviation)
> Services providers (Telecommunication, energy...)
> Science and research

PROFESSIONS
> Data analytics engineer
> Big Data architect
> Research and development engineer
> Consultant
> Product Manager for Big Data solutions
> Business Intelligence Analyst
> Business Analytics solutions provider

APPLYING
All applications should be made on line
https://www.eurecom.fr/en/postulant/ new
The web site provides full information on admission procedures.
http://www.eurecom.fr/en/teaching/master-science

COST
Tuition fees for the full program (2 years):
€12,000
€6,000 (European Union and Erasmus zone) Possible partial fee waivers and scholarships.

DURATION
2 years (starting in september):
3 semesters of courses followed by a 6- month paid internship in a lab or company.

LODGING
Accommodation is organized with the administration staff or EURECOM in public and private student halls of residence, rooms or shared flats.

SCHOOL CONTACTS
EURECOM
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