One of the 10 Univ in France labeled for excellence in internationally recognized research

One of the 4 French Institutes for AI research

The single funded Graduate school in the ICT domain in France

Professor Françoise BAUDE  |  KOM Master School  |  October 2019  |  visit: mastercs.unice.fr
Sophia-Antipolis: the largest technology park in Europe

- Created in the early 70’s
- ICT (50 % of jobs), Biotechnology (30% of jobs)
- 1400 companies
- More than 30,000 jobs
- 97% of are permanent

- 5,000 students
- 4,000 researchers
- Teaching ICT there since 30 years
DSC exit point at UNS
http://mastercs.unice.fr
Multimedia and Web Science for Big Data
Professor Françoise BAUDE |
KOM Master School |
October 2019
Campus Sophia Tech

a recently extended ICT Campus: additional buildings, dedicated to research and teaching in support to innovation

- Inria research center
- UNS/UCA : CNRS ass. research labs (I3S, LEAT), masters in ICT, Polytech school of Engineering, incubators
- EURECOM institute (research and teaching)
- All involved in EIT Digital
Sophia-Antipolis

Europe’s leading technology park Sophia-Antipolis

IT big industries

Public / private labs

Innovation ecosystem

Government & public agencies

Our specific program for DSc exit point: Multimedia and Web Science for Big Data

- **Objective:**
  - Help students to meet the challenges and make the technological choices of tomorrow in the domains of:
    - Data Analytics
    - Data Engineering
    - In the particular domain of multimedia content, also widespread available on the Web
  - Application – driven motivation
    - Data analysis for **specific data formats**: image, video, 3D images, text and metadata
    - Domain specific (and heterogeneous) datasets: biology, medicine, e-health, astronomy, smart cities
    - Web, social networks as key data sources
Technical courses for 24 ECTS

2019-20 Courses plan [with Total Elective: 12 ECTS]

Data science and data engineering support (6 ECTS Mandatory)
- Technologies for massive data
- Data Science industrial process (IBM, Amadeus,...)
- Multimedia & massive data streamed processing

Data Analysis, Mining [2 each]
- Data mining (in general)
- Advanced Machine Learning
- Analysis and indexing of images & videos with deep learning techniques
  - Data mining for networks

Multimedia and Web data processing [2 each]
- Applied AI (Multimedia, 3D, bio-imagery, biometry, etc)
- Web of Data

Personal project (6 ECTS)

Other Electives (each 2 ECTS by default)
- Large scale distributed systems
- Peer to peer systems
- Security of web applications
- Blockchain and Privacy
- Middleware for Internet of things
- Virtualized infrastructures in cloud computing
- Statistical Learning Methods (4)
- Statistical computational methods (CART, RF and introduction to SAS) (4)
- 3D Engineering
- Virtual reality
- Semantic web
- Knowledge engineering
- French initiation (on top of)

Shared with Sciences des Données Master 2 & Polytech 5th year’ Track
Max. 24 students per class for labs sessions
More than half of sessions are labs

Former exit students’ feedback good: Lot of flexibility (lot of choices, lot of different combinations), you can avoid (or not) overlap with entry courses 😊
Personal Research and Dev. project

• In group (up to 4), or individual
• Starts October => end of February
• Research oriented in many cases
• Good link to local ecosystem

EXAMPLES of former PROJECTS:

* Action elasticity compensation in video classification MinD/Spark CNRS I3S
  * Joconde Learn Wimics-MinD/Spark CNRS I3S/INRIA
  * Labeled topic classifier Meritis Labs
  * Tensor and matrix factorizations in Python: application to recommender systems SIS CNRS I3S
  * Assessment of the quality and relevance of automatic tests Amadeus
  * Long term digital data storage on DNA SIS CNRS I3S
Industrial Partners of EIT Digital Data Science tracks
Each November: 40+ companies @
Example of 5-6 months internships in Sophia-Antipolis

- Large Scale Video Description on YouTube-8M dataset, **CNRS I3S**
- Data anonymization through Generative Adversarial Networks in the differential Privacy scenario, **SAP Labs**
- Clustering techniques for DNA signal reconstruction, **CNRS I3S**
- End-to-end Multiple Object Tracking with Convolutional Recurrent Neural Networks, **Renault soft.Labs**
- Deep Speech Recognition in noisy environment, **NXP**
- Hotel Big Data Smart Cache Prototype, **Amadeus**

**ALL Internships/Master Thesis defenses terminate early September => GRADUATION, no need to enroll again**
(Minor) I&E Work and beyond?

- Numerous local activities in link with innovation
- “Challenge jeunes pousses” (start-up challenge) of Telecom Valley
  - [http://www.telecom-valley.fr/cjp](http://www.telecom-valley.fr/cjp)
  - October to March with coaching by professional
  - 17th edition in 2019
  - You can win 3,000 euros, 6 months of incubation and 12 months of housing
- DEMOLA network’ UCA branch (sort of I&E EIT Digital BDL): Invent @UCA
- Get in the Ring challenge

Services offered to students

• Help for immigration procedures
• Help for obtaining lodging benefits
  • Financial support for housing
• Help for housing at
  • Sophia-Antipolis
  • Nice

• Convenient and cheap for students transportation from Nice to Sophia-Antipolis
• Student club
• Sport facilities

• ... and a beautiful living environment
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<thead>
<tr>
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Your EIT Digital contacts on the French riviera