



# MSc in Applied Data Science & Big Data

Nice Sophia-Antipolis Campus – Paris Campus

[www.datasciencetech.institute](http://www.datasciencetech.institute)



- **Learn how to understand the analysis, design, implementation & monitoring of IT & Big Data architectures**
- **Get familiar with machine and deep learning algorithms with an industrial approach to applied mathematics**
- **Learn how to deploy Big Data architectures and Machine Learning results into corporate systems and get familiar with data visualisation**
- **Get awareness of the legal consequences of data handling, with a pinch of ethical thinking regarding the consequences of mining (big) data**

*"You have to learn the rules of the game. And then you have to play better than anyone else." - Albert Einstein*



## SELECTED COURSES

### Applied Mathematics for Data Science

*Calculus – Linear Algebra – Trigonometry  
& Complex Numbers*

### Advanced Statistical Analysis & Machine Learning

*CART and Random Forests and applications to Map/Reduce  
Features Selection & Engineering Models Comparison*

### Artificial Neural Network and Deep Learning

*Data representation and distributed representations,  
Universal Interpretation Theorem ...*

### Survival Analysis using R

*Probabilistic description of Survival data. non-parametric  
and semi-parametric (Cox model) statistical methods*

### Integrating Semantic Web technologies in DS dev

*Representing and querying web-rich data (RDF, SPARQL),  
Introducing Semantics in Data (RDFS, Ontologies)...*

### Algorithmics for Data Science – Optimisation

*Combinatorics and Complexity – Graph-based modelling  
& algorithms for discrete optimisation.*

### The Hadoop & SPARK ecosystem

*HDFS, scheduling & ressources management, Workflow  
management & ETL, Dataflow management ...*

### Time-Series Analysis using SAS

*Forecasting Using SAS Software: A Programming Approach  
Forecasting Using SAS Forecast Server Software*

### Agent-Based Modelling for population behaviour

*Modeling objectives, model types, matching modelling  
approaches to studies objectives, ODD protocol...*

### Modelling complex and chaotic economic systems

*with System Dynamics - Causal loop diagrams, Stock  
and flow diagrams, Non-linear algebraic equations, Chaos*

## PROGRAM DETAILS

**24 WEEKS OF LECTURES**

**600 HOURS OF TUITION**

**17 COURSES**

**10 REAL-LIFE PROJECTS**

**2 ENTERPRISE-LEVEL  
CERTIFICATIONS**

**Amazon AWS**

*Preparation for AWS Certified  
Solutions Architect – Associate*



**SAS Institute**

*Preparation for SAS Certified  
Predictive Modeler Using SAS  
Enterprise Miner 14*



## 3 STUDY OPTIONS

### Full-Time On-Campus

*(Sophia-Antipolis or Paris)*

**6 months of classes**

**& 6-month internship**

### Full-Time OFF-Campus

*(Online Education)*

**6 months of classes &**

**Engineering Project**

### Part-Time SPOC

*(Small Private Online Course)*

**18 months of classes**

**- Part-time schedule**

## INDUSTRIAL PARTNERS



THE  
POWER  
TO KNOW.



**bpifrance**

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