Big data is revolutionizing modern companies in terms of management, research & development and marketing. Constantly evolving digital technologies are prompting the emergence of new approaches to agriculture, requiring new skills. The aim of the Master of Science in Agricultural & food data management is therefore to train up data scientists to meet agricultural and food industry challenges.

**CONTEXT**

The focus is on acquiring and applying IT and data mining techniques in the field of research and in companies and organizations involved in creating intelligence for agriculture.

The program offers solid, future-oriented training, drawing on a multidisciplinary teaching approach, the extensive experience of program staff in internship supervision, and partnerships with several teaching and research institutions.

Our program enjoys the support of several academic and industry partners, including ACTA, Agro EDI Europe, NatUp, the Institute of Soil Science and Plant Cultivation (IUNG) in Pulawy (Poland), the Normandy Regional Chamber of Agriculture, Coop de France, Defisol, Inventiv IT, ISAGRI, MiXscience (Avril Group), Proagrica, Sodiaal, Seatech, OKP4.

**SKILLS**

01 Expertise in big data management, which has become a key factor in companies performance and growth.

02 Acquisition of IT and statistics techniques, data mining and machine learning applied to agriculture and the food industry in general, with a special focus on precision agriculture.

03 Developing a good command of statistics software and programming languages will be a real strength for students interested in research and development in areas such as plant nutrition and plant and animal epidemiology.
The MSc is taught in English and lasts 18 months. It can also be proposed as a semester of study abroad.

**First semester:** from October 4th 2021 to January 21th, 2022

**Second semester:** from February 1st to June 17th 2022

### Course Structure

#### Agriculture and Event of Big Data
- An overview of Agriculture and IAA, Sources and reliability of Data in several agricultural sectors

#### Data Quality Management in Agriculture
- Data cleaning, preprocessing, Sampling strategy for big data
- Applied statistics

#### Data Analysis Applied to Agriculture
- Principal components analyses, Cluster analysis, Factorial analysis, Discriminant analysis, Software analysis (R, SPSS...)

#### Survey Methods
- Methods for collecting data, Unstructured data, Multiple correspondence analysis, Survey data analysis, Text mining : social network analysis

#### Software Engineering
- Software architectures, software development

#### IT Big Data Management I
- Data sources in agriculture, Database design and modeling

#### Cross Fields
- Project management, Sociology
- French language / English language

#### Agriculture
- Mechanised agriculture, Micro parcels experimental designs, Precision agriculture, Decision making tools
- Robotics

#### Machine Learning Methods
- Cross validation method, Neural networks
- K-means, Regression trees, Bagging, Random forests
- Kernel methods, K-nearest neighbours method, Python software

#### IT Big Data Management II
- Massive data processing, IT security

#### Quantitative Image Analysis
- Signal image processing, Cartography learning Qgis software

#### Modelling
- General linear method / linear method
- Time series modeling

#### Cross Fields
- Digital Marketing, French Language (FLE)

#### Big Data Project
- The project topic is suggested and led by a company, and supervision is provided by associate professors. Students create a decision-making tool for smart farming, build predictive models to limit disease outbreak, or design innovative software.

### Careers

The program provides students with skills for which there is significant demand in the following sectors: agriculture, food industry, traditional commerce and e-commerce, consulting, retail, e-communication, IT, management, marketing and digital marketing, R&D and healthcare, with salary prospects of over €50,000 per annum.

- Data scientist
- Chief data officer
- Master data manager
- Epidemiologist
- Data designer
- Research leader in agronomy
- Manager of animal health observatories
- Data/business analyst

### Work Experience

- Six-month placement under an internship agreement or professional training contract in companies such as NatUp, SODIAAL, Promize (ISAGRI), and Evolution XY, Agrial Maisadour
- Two 4-week assignments set by companies and supervised by professionals

### Credits

90 credits broken down as follows:

- 30 ECTS credits for the 1st semester
- 30 ECTS credits for the 2nd semester
- 30 ECTS credits for the internship and professional thesis
JEAN-MARIE SAVALLE, PRESIDENT OF ISAGRI
«Using new technologies to process data is a real challenge for the agricultural and food industries, in terms of traceability, strategic monitoring, competitiveness and innovation. The advent of digital technologies and big data are changing our approach to management and the development of new decision-making tools. The training provided by the Master of Science in Agricultural and food data management, developed in conjunction with industry professionals, represents an opportunity for companies in the industry to benefit from talented individuals whose expertise will undoubtedly represent considerable added value.»

ESTELLE, STUDENT MSC 2018-2019
«I chose the MSc in Agricultural & Food Data Management to gain new skills and because this program covers the arrival of digital technologies and data processing in the agricultural sector. I’ve learned such a lot, including programming and statistics, and I particularly enjoy mixing with the international students. There was soon a great atmosphere and team spirit in our group. I’m an intern at Evolution, an animal genetics company based near Rennes. It is very rewarding and offers a different perspective on the skills developed in class. It has given me valuable practical experience!»

MICKAËL NABAT, HEAD OF BIG DATA DEVELOPMENT
PROAGRICA
«Making effective use of agricultural data is vitally important if we are to meet the societal challenges of this century. It is a key part of the strategies developed by companies in the industry. People with skills in management, data science and agronomy are a crucial link in the chain as they can help management teams to lead these new projects and provide support to those in the field. These new profiles need solid training that encompasses all these criteria.»

TESTIMONIALS

CHOOSE FRANCE
Discover the French “art de vivre” and gastronomy. Learn French, the world’s most commonly spoken language by 2050 (Natixis 2018).

TRY NORMANDIE
Normandy: Top region to visit (Lonely Planet 2018). Experience the vibrant city of Rouen, a safe city on a human scale with 43,000 Students and 5,000 International Students.

STUDENT LIFE
• Social event organized by French student and the International Department (Gala, Team building day, touristic stay)
• Several student organization on the campus.

HEALTH & WELL-BEING
• Benefit from the excellent and free French healthcare system
• On campus psychological support team
• Disability friendly campus and personalized support
• University hospital within 15’

Contact:
Alexandre Poinçon
Student Recruitment Officer
alexandre.poincon@unilasalle.fr

INTERNATIONAL
Anthony Voisine
Student Recruitment Officer
02 32 82 91 29 / +33 (0)7 61 00 75 44
anthony.voisine@unilasalle.fr

www.unilasalle.fr
http://international.unilasalle.fr/