

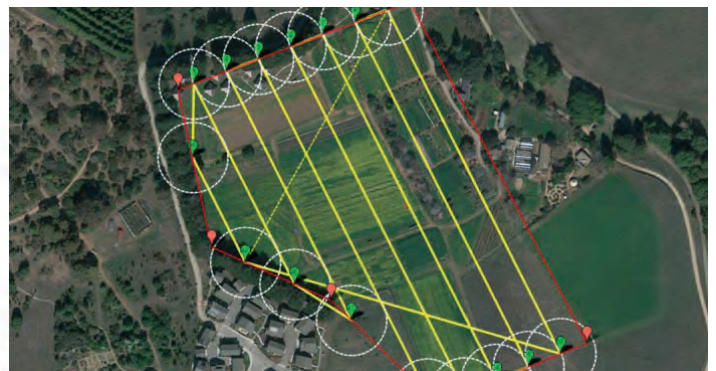
2018–2019

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Normandy
Rouen campus

Master of Science Agricultural & Food Data Management





OBJECTIVES

A Master of Science with a strong focus on innovation and data science for agriculture

- Interdisciplinary skills: agriculture, food, big data, mapping, data mining, IT, machinery, project management, sociology, e-marketing, etc.
- Jobs centered on new technologies
- Innovation with a project led by professionals
- Expert supervision by professionals and researchers

The Master of Science in Agricultural & Food Data Management is at the interface of cutting-edge technology and the agriculture and food industries. Topics of study include processing data from connected devices such as drones, satellites, tablets and smartphones and data on the behavior of stakeholders in a given field, and managing and analyzing big data for decision-making purposes.

By 2020, big data will have had a revolutionary effect on companies in terms of management, research & development and marketing. The rapid development of digital technologies will result in the emergence of new approaches to agriculture, requiring new skills. The aim of the Master of Science is to train up data scientists for the agricultural and food industries.

Our program enjoys the support of several academic and industry partners, including ACTA, Agro EDI Europe, Capseine, 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 and TheGreenData.

SKILLS

01/ The focus is on expertise in big data management, which has become a key factor in company performance and growth.

02/ The course is centered around the 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.

COURSE STRUCTURE

The MSc is taught in English and lasts 18 months.

It can be proposed as a semester of study abroad

First semester: from October, 1st, 2019 to January, 17th, 2020

Second semester: from February, 3rd, 2020 to June, 12th, 2020

Semester 1

AGRICULTURE AND ADVENT OF BIG DATA

- An overview of agriculture and the food industry
- Sources and reliability of data in several agricultural sectors

DATA QUALITY MANAGEMENT IN AGRICULTURE

- Data cleaning / preprocessing / sampling strategy for big data
- Applied statistics
- Simulation methods

DATA ANALYSIS APPLIED TO AGRICULTURE

- Principal component analysis
- Cluster analysis
- Factorial analysis
- Discriminant analysis
- Software analysis (R, SPSS, etc.)

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
- Digital marketing
- French language
- English language

Semester 2

AGRICULTURE

- Mechanized agriculture
- Micro parcels experimental designs
- Precision agriculture
- Decision-making tools

MACHINE LEARNING METHODS

- Cross validation method
- Neural networks
- K-means
- Regression trees, bagging
- Support vector machine
- Random forests
- Kernel methods
- K-nearest neighbors method
- Sparse methods for high-dimensional data

IT BIG DATA MANAGEMENT II

- Massive data processing
- IT security

QUANTITATIVE IMAGE ANALYSIS

- Signal image processing
- Mapping, learning QGIS software

MODELING

- General linear method
- Non-linear method
- Time series modeling

CROSS FIELDS

- Sociology
- French language

BIG DATA PROJECT



CAREERS

This program provides training in professions that are highly sought after by companies, with annual salaries above €50,000:

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



SECTORS

- Agriculture
- Food industry
- Trade / e-commerce
- Consulting
- Retail
- e-communication
- IT
- Management
- Marketing
- Digital marketing
- R&D
- Health

TESTIMONIALS



"... talented individuals whose expertise will undoubtedly represent considerable added value..."

"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."

Jean-Marie Savalle – President of ISAGRI



"... considerable challenges to improve the sustainability of livestock farming..."

"The livestock industry is going through a period of major change. It is facing considerable challenges to improve the sustainability of livestock farming. The opportunities offered by digital technologies can make a positive contribution to these developments in our professions. Combining data management skills with knowledge in zootechnics will be vital. That's why the MSc is so important – unfortunately this type of profile is still all too rare!"

Anne Picot – DataLab Manager
MiXscience, Avril Group



"... meet the societal challenges of this century..."

"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."

Mickaël Nabat – Head of Big Data Development
PROAGRICA

ADMISSION

General engineering degree
Master's degree or equivalent

Exceptionally, students with a Bachelor's degree or equivalent with experience

Admission will be based on your application and an interview

Download the application form from www.unilasalle.fr

Return by:

- 1st session: February 20, 2019
- 2nd session: April 30, 2019
- 3rd session: June 21, 2019

REGISTRATION FEES

18-mth conventional program: EUR 8,000
Continuing education and alternation: EUR 12,000

START OF TERM

October 1, 2019

OPEN DAYS

ROUEN CAMPUS

Saturday December 8, 2018
Saturday February 2, 2019
Saturday March 9, 2019



Follow us !



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