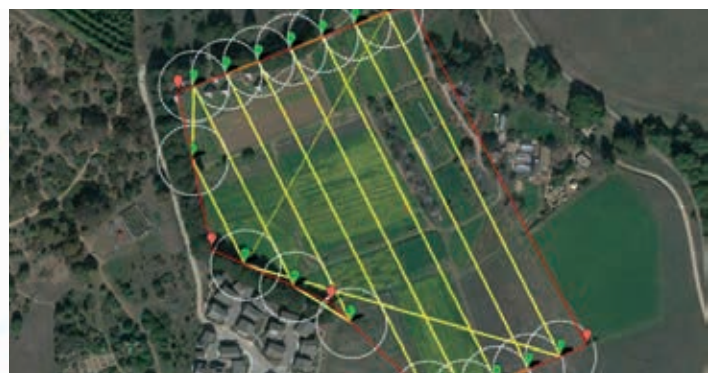




Master of Science
Agricultural Data Management & Decision Models



COURSE STRUCTURE

- All lectures are taught in English • Some lectures in collaboration with the Polish Institute of Soil Science and Plant Cultivation (IUNG) • 6-month internship in industry
- Big data for companies project – Thesis.

AGRICULTURE AND ADVENT OF BIG DATA

- An overview of agriculture
- 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 of collecting data
- Unstructured data
- Multiple correspondence analysis
- Survey data analysis
- Text mining: social network analysis, etc.

SOFTWARE ENGINEERING

- Software architectures: client-server, MVC, cloud computing, SOA, REST, microservices
- Software development: algorithmic, object-oriented programming, HMI, macro

IT BIG DATA MANAGEMENT

- Data sources in agriculture: sensors, communications protocols/ networks, data exchange standards in agriculture, open data, web of data
- Database design and modeling: relational, XML, multidimensional, OLAP, compared with NoSQL/ NewSQL databases, query languages

CROSS FIELDS

- Project management
- Rural sociology
- French language
- English language

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

BIG DATA MANAGEMENT II

- Distributed file systems, Hadoop
- Parallel, distributed, massive data processing with Map Reduce
- NoSQL/NewSQL databases
- IT security for big data: vulnerabilities, protection-privacy/ security policies, cryptography

QUANTITATIVE IMAGE ANALYSIS

- Signal image processing
- Mapping, learning QGIS software

MODELING

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

CROSS FIELDS

- IS strategy / management, system integration
- French language (FLE)
- English language



SECTORS

This course is geared towards professions that are in increasing demand, such as:

- Data scientist/data miner
- Chief data officer
- Master data manager
- Epidemiologist (animals and plants)
- Data designer
- Agricultural machinery designer
- Consultant
- Research leader in agronomy
- Manager of animal health observatories
- Data/business analyst
- Designer/developer



BIG DATA FOR AGRICULTURE PROJECT

The aim of this project, led by professionals and researchers, is to design and develop innovative decision-making tools for agriculture.

Experience life in Rouen,
a city with over 37,000 students
and a buzzing and vibrant
student life.



Nearby: halls of residence and private rentals, university restaurant,
sports facilities, public transport network, etc.



BY TRAIN

Arrival at Rouen-Rive-Droite railway station
Bus stop opposite the station,
no. F2 to "Mont-Saint-Aignan"

BY BUS

TEOR no. T1: "Mont aux Malades" stop
Bus no. F2: "UniLaSalle" stop
Bus no. 43: "UniLaSalle" stop

BY CAR

GPS coordinates:
latitude: 49.468098
longitude: 1.072485



ADMISSION

General engineering – Master's
degree or equivalent

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

Selection shall be based on
the application and an interview

Download the application
form from www.unilasalle.fr

Return by:

- April 28, 2017
- June 30, 2017



REGISTRATION FEES

Tuition fees for
18 months: EUR 8,000



START OF TERM

October 2, 2017

OPEN DAYS



ROUEN CAMPUS

Saturday January 21, 2017

Saturday March 11, 2017



Contacts



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