Course : Microsoft Azure Machine Learning, developing and using algorithms

Practical course - 3d - 21h00 - Ref. AZL
Price : 2010 € E.T.

Algorithms are becoming one of the most important topics in Big Data. They are the tools for exploratory, explanatory or predictive methods applied to data, within the framework of machine learning. This course will give you the skills you need to use Azure Machine Learning.

Teaching objectives

At the end of the training, the participant will be able to:

- Getting to grips with the Azure Machine Learning interface
- Choose from several equivalent algorithms based on a given problem
- Discover the basics of R and Python to enhance the capabilities of Azure Machine Learning
- Exploiting an experience through a web service

Intended audience

Data scientists, data miners, statisticians, developers responsible for putting models into production.

Prerequisites

Basic knowledge of statistics (centering, dispersion, correlation, hypothesis testing). Programming or algorithmic notions may be useful.

Practical details

Exercise

Case studies on realistic, large-scale data

Course schedule

PARTICIPANTS

Data scientists, data miners, statisticians, developers responsible for putting models into production.

PREREQUISITES

Basic knowledge of statistics (centering, dispersion, correlation, hypothesis testing). Programming or algorithmic notions may be useful.

TRAINER QUALIFICATIONS

The experts leading the training are specialists in the covered subjects. They have been approved by our instructional teams for both their professional knowledge and their teaching ability, for each course they teach. They have at least five to ten years of experience in their field and hold (or have held) decision-making positions in companies.

ASSESSMENT TERMS

The trainer evaluates each participant's academic progress throughout the training using multiple choice, scenarios, hands-on work and more.
Participants also complete a placement test before and after the course to measure the skills they've developed.

1 Getting to grips with the Azure Machine Learning interface

- Azure offer. Pay-per-use billing.
- Getting to grips with the Machine Learning Studio interface.
- Create a dataset. Connect to a data source.
- Building a ML experience.
- Define a predictive web service.
- The Cortana Intelligence Gallery.

Hands-on work

Getting to grips with the Azure ML interface. Creating a dataset. Define a predictive web service.

2 Creating a machine learning experience

- Use the algorithm selection tree.
- Detect outliers.
- Select algorithm variables (features selection).
- Initialize the model, train the model, evaluate the model.
- Reforming a predictive model.
- Transform algorithm variables (features engineering).
- Limit rows in a dataset.

Hands-on work

Evaluate different algorithms using the Receiver Operating Characteristic (ROC) curve.

3 Know how to parameterize the main algorithm families

- Unsupervised clustering algorithms.
- Linear regression algorithms.
- Logistic or ordinal regression algorithms.
- Binary or one-versus-all classification algorithms (supervised approach).
- Ensemblist methods (forest, jungle...).
- R and Python packages. The Vowpall Wabbit framework.
- Algorithm parameterization.

Hands-on work

Set up algorithm families with R/Python.

4 Process other types of data

- Analyze time series, detect anomalies.
- Text data analysis with R packages.
- Apply a Vowpal Wabbit algorithm (Latent Dirichlet Analysis).
- Exploiting images with Jupyter notebooks.

Hands-on work

Text or image data processing.

TEACHING AIDS AND TECHNICAL RESOURCES

• The main teaching aids and instructional methods used in the training are audiovisual aids, documentation and course material, hands-on application exercises and corrected exercises for practical training courses, case studies and coverage of real cases for training seminars.
• At the end of each course or seminar, ORSYS provides participants with a course evaluation questionnaire that is analysed by our instructional teams.
• A check-in sheet for each half-day of attendance is provided at the end of the training, along with a course completion certificate if the trainee attended the entire session.

TERMS AND DEADLINES

Registration must be completed 24 hours before the start of the training.

ACCESSIBILITY FOR PEOPLE WITH DISABILITIES

Do you need special accessibility accommodations? Contact Mrs. Fosse, Disability Manager, at psh-accueil@orsys.fr to review your request and its feasibility.

5 Discover new tools for Azure Machine Learning

- New Azure bricks for ML (Experimentation/Model Management).
- Data inspection and preparation (e.g. advanced transformations).
- Implementing Azure Machine Learning instances.
- Monitoring of execution and evaluation metrics.
- Deployment scenarios (local/Spark/Docker/AKS).

Hands-on work

Data preparation and advanced transformations.