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AutoML Training with H2O.ai

2 days (14 hours)

Overview

H2O AutoML is a cutting-edge solution for automating the machine learning lifecycle. It enables you to quickly generate high-performance models while providing full transparency into the algorithms used.

Our AutoML training with H2O.ai will help you master machine learning automation, from data preparation to selecting the best model via the Leaderboard. You'll learn how to use the tool to optimize your workflows without sacrificing interpretability.

You will discover how to compare model performance, use explainability features, and deploy your results in production environments via MOJO and POJO formats.

By the end of the training, you will be able to create robust predictive models automatically, understand H2O's selection mechanisms, and scale your data pipelines.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Create automated ML models
- Compare model performance
- Deploy H2O.ai models

Target Audience

- Data scientists
- Advanced analysts

Prerequisites

- Basic knowledge of ML and Python/R

Software requirements

- At least 8 GB of RAM, 16 GB recommended
- Python environment (Jupyter) or RStudio
- Access to an H2O instance (local or server)

Our AutoML with H2O.ai training program

[Day 1 - Morning]

Introduction to H2O.ai and the AutoML ecosystem

- Understanding the H2O cluster architecture
- Initializing and configuring the environment (Python/R)
- Principles of AutoML: saving time and reducing bias
- Exploring object types: H2OFrame and models
- Loading and preparing data for automation
- Hands-on workshop: First launch of H2O and data exploration.

[Day 1 - Afternoon]

Automated Training and Optimization

- Configuring the H2OAutoML function (time, metrics, algorithm exclusion)
- How Stacked Ensembles work
- Automatic Feature Engineering Management
- Progress tracking and stopping criteria
- Hands-on Workshop: Automated Generation of a Classification Model

Leaderboard Analysis and Selection

- Interpreting the H2O Leaderboard
- Evaluation Metrics: AUC, LogLoss, RMSE, Gini
- Comparison of "Best of Family" models
- Extracting optimized hyperparameters

- Hands-on Workshop: Critical Selection of the Best Model Based on Business Constraints.

[Day 2 - Morning]

Interpretability and

Diagnostics

- Using the H2O Explain module
- Variable importance and Partial Dependence Plots (PDP)
- Local analyses (SHAP values)
- Performance visualization (ROC, Confusion Matrix)
- Hands-on workshop: Comprehensive model audit to ensure transparency.

[Day 2 - Afternoon] Deployment

and Industrialization

- Model export: MOJO and POJO formats
- Inference outside of H2O using Java or Python wrappers
- Version management and model persistence
- Best practices for production deployment
- Hands-on workshop: Exporting and testing a MOJO model for a third-party application.

Final case study: Complete AutoML pipeline

- Modeling challenge on an unknown dataset
- Balancing computational time and accuracy
- Presentation and justification of results
- Summary of the strengths and limitations of AutoML
- Hands-on workshop: Final "End-to-End" project—from raw data to deployment.

Target Audience

This training is intended for both individuals and companies, large or small, wishing to train their teams in new advanced IT technologies or to acquire specific business knowledge or modern methods.

Assessment upon enrollment

The pre-training assessment complies with Qualiopi quality standards. Upon final registration, the learner receives a self-assessment questionnaire that allows us to evaluate their estimated proficiency in various types of technologies, as well as their expectations and personal goals regarding the upcoming training, within the limits imposed by the selected format. This questionnaire also enables us to anticipate certain connection issues or

internal security issues within the company (intra-company or virtual classroom) that could pose challenges for the monitoring and smooth running of the training session.

Teaching Methods

Practical Course: 60% Practical, 40% Theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been properly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training program.