



Let's Reach For Excellence!

TAN DUC INFORMATION TECHNOLOGY SCHOOL JSC

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Applied Supervised Learning with Python

Duration: 02 days

Applied Supervised Learning with Python provides you a rich understanding of machine learning, one of the most pursued topics in information science, and Python, one of the most popular scripting languages. Through this course, you'll learn Jupyter Notebooks, the technology used in academic and commercial circles with in-line code running support.

Machine learning—the ability of a machine to give correct answers based on input data—has revolutionized the way we do business. Applied Supervised Learning with Python provides a rich understanding of how you can apply machine learning techniques to your data science projects using Python. You'll explore Jupyter notebooks, a technology widely used in academic and commercial circles with support for running inline code.

With the help of fun examples, you'll gain experience working on the Python machine learning toolkit—from performing basic data cleaning and processing to working with a range of regression and classification algorithms. Once you've grasped the basics, you'll learn how to build and train your own models using advanced techniques such as decision trees, ensemble modeling, validation, and error metrics. You'll also learn data visualization techniques using powerful Python libraries such as Matplotlib and Seaborn.

By the end of this course, you'll be equipped to not only work with machine learning algorithms, but also be able to create some of your own!

AUDIENCE

Applied Supervised Learning with Python is for you if you want to gain a solid understanding of machine learning using Python. It'll help if you have some experience in any functional or object-oriented language and a basic understanding of Python libraries and expressions, such as arrays and dictionaries.

This course does not cover the basics of Python. This course focuses heavily on real-world implementation of supervised learning.

AT COURSE COMPLETION

After completing this course, you will be able to:

- Understand the concept of supervised learning and its applications
- Implement common supervised learning algorithms using machine learning Python libraries
- Validate models using the k-fold technique
- Build your models with decision trees to get results effortlessly
- Use ensemble modeling techniques to improve the performance of your model
- Apply a variety of metrics to compare machine learning models

COURSE OUTLINE

- 1. Python Machine Learning Toolkit**
 - Supervised Machine Learning
 - Jupyter Notebooks
 - pandas
 - Data Quality Considerations
- 2. Exploratory Data Analysis and Visualization**
 - Summary Statistics and Central Values
 - Missing Values
 - Distribution of Values
 - Relationships within the Data
- 3. Regression Analysis**
 - Regression and Classification Problems
 - Linear Regression
 - Multiple Linear Regression
 - Autoregression Models
- 4. Classification**
 - Linear Regression as a Classifier
 - Logistic Regression
 - Classification Using K-Nearest Neighbors
 - Classification Using Decision Trees
- 5. Ensemble Modeling**
 - Overfitting and Underfitting
 - Bagging

- Boosting

6. Model Evaluation

- Evaluation Metrics
- Splitting the Dataset
- Performance Improvement Tactics