PENHALLOW ASSOCIATES LIMITED
A Financial Knowledge Company

Practical Artificial Intelligence, Machine Learning and Data Science

Virtual Learning: Duration 2 Hours, Periods over 2 Days
or 3 Hours, 3 Periods over 3 Days
Course Price: £210 plus VAT for 2 days or £330 plus VAT for 3 days
9.12.24(10:00-11:00), 10.12.24(10:00-11:00), 11.12.24(10:00-11:00)

Location: (UK) Virtual Learning Live Environment via Video Communication.
To book, or, require more information. Please contact Alan Penhallow;
e-mail: alanp@penassco.co.uk
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This programme may be of interest to your colleagues.

www.penassco.co.uk

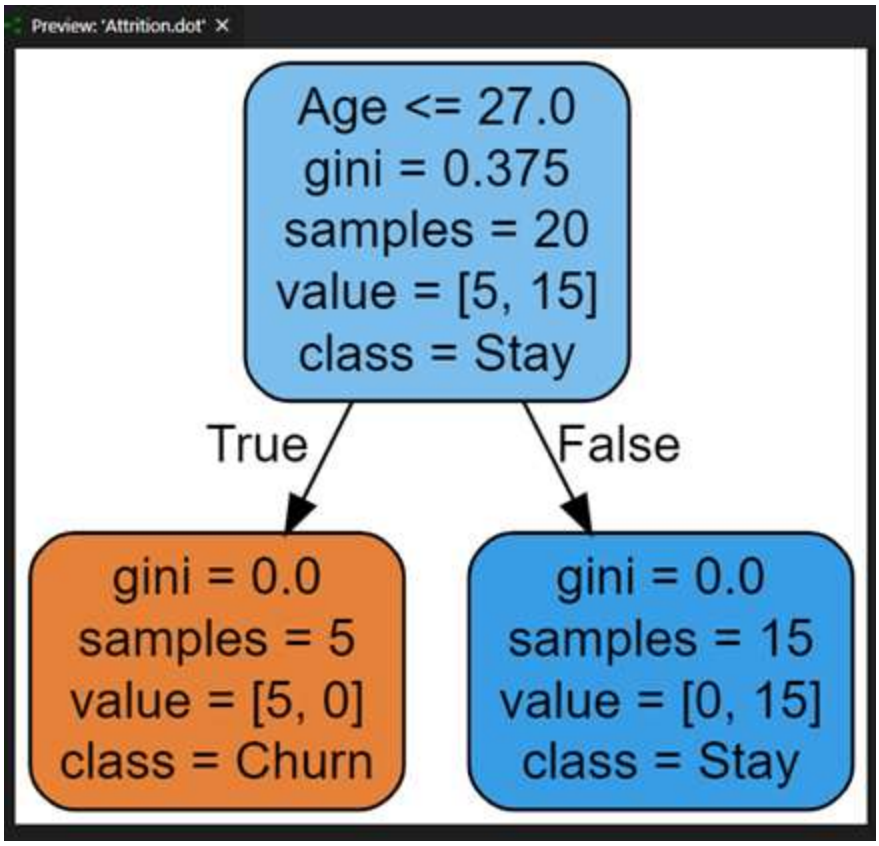
Course Overview

Data science is related to data mining, machine learning and big data. An acceleration in the pace of recent technology developments like Python has facilitated machine learning on laptops at a time when there has been exponential growth in the use of machine learning to provide solutions to challenges in research, commerce, science and social sciences. This course demonstrates how machine learning models apply classification to numerical data before focusing on applying similar models to text data. Experimenting with applications and data sets will ensure attendees lean Artificial Intelligence (AI) tools, techniques and applications. The course will initially guide attendees through the background to AI tools and techniques before applying these to either (or both of) numerical data or natural language processing examples.

Who Should Attend

1. Attendees from a business and finance background with limited IT knowledge but who want to learn more about AI, Machine Learning and Data Science.
2. Attendees from a general IT background who want to learn more about AI, Machine Learning and Data Science with a view to working in these areas.
3. Attendees who are business are finance managers seeking to implement AI, Machine Learning and Data Science in their organisations who want a roadmap to follow in order to do this efficiently and successfully.
4. Analyst attendees who want to learn more about and demystify the crafts of AI, Machine Learning and Data Science to see how their analysis can benefit by introducing these tools and techniques.

The course is very hands on with attendees encouraged to download free Python software and datasets to learn more about and experiment with AI, Machine Learning and Data Science methods and classes.



Program 1

- Introduction
- Customer Attrition using a non-linear tree based predictive model in Python
    - Decision trees
    - How decision tree models make predictions
    - Decision tree visualisation
    - Modified data sets
    - Introducing Neural Networks
- Data Quality and Machine Learning
    - How is data quality measured?
    - How to prepare data for machine learning?
    - What happens if the data is bad?
- Machine Learning modelling concepts
    - Bias
    - Variance
    - Over and under fitting
    - Validation techniques

Program 2

- Applying a classification neural network in Python to Credit Card churn data
    - Introduction
    - Data source
    - Applying the model in Python
- Using a regression neural network in Python to analyse an Internet of Things Heat Network
    - Introduction
    - Data source
    - Applying the model in Python
- Using a regression neural network in Python to analyse Luxury item online auction data
    - Introduction
    - Data source
    - Applying the model in Python

Program 3

- Working with text data
    - Natural Language Processing (NLP)
    - Data preparation and analysis
    - Vectors and classification modelling
- Data Preparation and Analysis
    - Enriching and merging data
    - Data cleaning
- Using NLP to classify verses of the Bible
    - Numerical Features Vectors
    - Pipeline classes

Learning Outcomes

- What are Artificial Intelligence (AI), Machine Learning and Data Science?
- How do decision tree models make predictions?
- How does data quality impact machine learning?
- What are the machine learning modelling concepts?
- How can I use classification neural networks to predict data categories?
- How can I use regression neural networks to predict scalar quantities?
- What is Natural Language Processing (NLP) and how can it be used to classify text?
- How can I convert text to vectors and use NLP to categorise text?

Trainer Profile

Malcolm Gloyer

Malcolm Gloyer, Chartered Member of the Chartered Institute for Securities and Investments, explains some solutions to the challenges of AI, Machine Learning and Data Science. As a Certified Practicing Project Manager (CPPM MAIPM), Malcolm has more than 30 years' experience working on projects in the UK and Australia, specializing in data strategy, market and credit risk, derivatives, commodities and artificial intelligence. Malcolm has worked as a consultant at companies including Bank of America Merrill Lynch, London Metal Exchange, Nomura, ABN Amro, BNP Paribas, Santander and Lloyds Bank and has been a guest lecturer at the University of Aberdeen, London School of Economics and James Cook University in Australia. Malcolm has had articles published in professional investment magazines and has written several eBooks on risk management, green finance, data science and machine learning.

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