

# Artificial Intelligence in Banking

## INTRODUCTION

- Artificial intelligence has been successfully applied to various fields to create quantum-leap improvements across the entire supply and value chains. Artificial intelligence applications include recommender systems, smart assistants, chatbots, classifiers, and predictive engines. Recommender systems are currently able to recommend the right product to the right person at the right time. Smart assistants are part of everyday life. Chatbots are becoming more and more common in customer service applications. Classifiers can detect fraud, and predictive engines can predict credit defaults.
- With the ever-increasing use of social networks by customers, organizations are more inclined to analyze trends and sentiments. Natural Language Processing provides suitable solutions to this problem. Moreover, data visualization tools are becoming crucial to gain insights from the huge amount of data available to organizations.
- The participant to this Artificial Intelligence in Banking training course will learn how to apply artificial intelligence to the banking sector. In particular, the participant will learn how recommender systems, chatbots, classifiers, and predictive engines can provide value in the banking sector.

This training course will highlight:

- Data analysis and visualization
- Clustering and customer segmentation
- Machine Learning for credit default prediction and fraud detection
- Natural Language Processing
- Chatbots and smart assistants

## OBJECTIVES

By the end of this training course, participants will learn to:

- Develop a credit default predictor
- Develop a fraud detection system
- Develop a recommender system
- Develop a customer segmentation system
- Build a chatbot that assists customers

## TRAINING METHODOLOGY

- Participants in this training course will receive thorough training on the subjects covered by the course outline with the Tutor utilising a variety of proven adult learning teaching and facilitation

techniques. Training methodology includes combining a presentation of the main concepts and hands-on practical exercises to be completed by the participant.

## **ORGANISATIONAL IMPACT**

The organization will ensure that the participant employees know the latest developments in Artificial Intelligence and how it can solve business problems. Organisations will:

- Learn to identify opportunities for applying Machine Learning to solve business problems
- Learn to use the most commonly employed software in AI and data analytics
- Learn to build prediction systems
- Learn to build customer segmentation and recommender systems
- Learn to build and effectively use chatbots
- Learn how Natural Language Processing could be used to solve business problems

## **PERSONAL IMPACT**

As a participant, you will:

- Become familiar with Artificial Intelligence and its applications
- Learn how to visualize and interpret data to make recommendations
- Learn how to build and use predictive engines to make informed decisions
- Learn how to extract knowledge from raw text
- Learn how chatbots could be helpful in your job instead of being a risk
- Become familiar with AI tools such as Python, R, and WEKA

## **WHO SHOULD ATTEND?**

This training course is intended for professionals interested in solving problems in the Banking sector using Artificial Intelligence.

This training course is suitable for a wide range of professionals but will greatly benefit:

- Risk managers
- Marketing managers and professionals in the Banking sector
- Computer programmers who intend to understand the applications of Artificial Intelligence in Banking
- Technologists and researchers interested in Banking and Artificial Intelligence
- Customer service managers and professionals in the Banking sector

## **Course Outline**

Artificial Intelligence Basics

- Artificial Intelligence and Machine Learning
- Typical applications
- The architecture of a system
- Software tools: Python
- Software tools: R
- Software tools: WEKA

## Data Analytics and Visualization

- Data gathering
- Feature engineering
- Statistical analysis
- Data visualization
- Dimensionality reduction

## Unsupervised and Supervised Learning

- Similarity estimation
- Clustering
- Association rules
- Recommender systems
- K-Nearest Neighbors
- Decision Trees
- Naïve Bayes
- Artificial Neural Networks

## Natural Language Processing

- Extracting structure from raw text
- Regular expressions
- Word features and semantics
- Text classification
- Information extraction
- Question answering systems

## Building a Chatbot

- Extracting information from conversations
- Chatbot as a search engine
- Natural Language Understanding
- Natural Language Generation
- Building a system