

Artificial Intelligence and Machine Learning for Credit Risk, Fraud Analytics and Anti-Money Laundering (AML) - By Ng JinSheng

INTRODUCTION

Financial institutions are often plagued by credit risk exposures such as fraudulent activities. According to the National Fraud Authority, it is estimated that more than USD\$100 Billion are lost to fraud transactions in the United Kingdom annually, and in the United States, that figure is more than USD\$40 Billion according to the Federal Bureau of Investigation (FBI). Notwithstanding the financial impact felt by large entities such as the State or Institutions, perpetrators and fraudster are often creative in their ways of exploitations, taking advantages of systemic weaknesses to their advantage.

Come discover how you can harness the power of artificial intelligence (AI) and machine learning to not just make sense of risk, fraud and money laundering, but also to derive and possess unparalleled competitive advantage through the discovery of actionable business insights which were otherwise left undetected, achieving tremendous business value in the process. Using updated case studies and used case scenarios, a highlight of this course also includes the anti-money laundering (AML) component which will bring the participants through detection frameworks and prevention methodologies from the perspective of blockchains, machine learning and A.I.

This 2-day advanced course is specially designed for participants who have attended the course titled “A Primer for Big Data, Credit Risk and Fraud Analytics” offered by D&B. Participants who possessed skills, knowledge and competencies pertaining to the coverage of the pre-requisite course can also apply for this advanced class.

LEARNING OBJECTIVES

By the end of this workshop, participants will be able to:

- Describe and distinguish the different applications of machine learning models in credit risk and fraud analytics
- Develop models for effective credit risk management and fraud detection using machine learning approaches
- Apply artificial intelligence and machine learning techniques and algorithms to achieve business competitive advantage
- Apply data-driven business decision-making principles for effective risk management purposes
- Design and formulate an actionable business strategy from the perspective of artificial intelligence (AI) and machine learning
- Apply the Anti-Money Laundering (AML) Framework to derive actionable business insights

COURSE OUTLINE

Overview of Anti-Money Laundering (AML)

- ❖ Understanding what exactly is money laundering
- ❖ Governance and Prevention
- ❖ AML Frameworks and Methodologies
- ❖ Case Studies and Applications: Blockchains, Banks and Non-Banks Financing and terrorism

Overview of Artificial Intelligence (AI) and Machine Learning Tools and Techniques

- ❖ Predictive Analytics
- ❖ Overview of Modelling Techniques: Decision tree algorithms, Regression Modelling and the Neural Network
- ❖ Case Studies: Predictive analytics and applications credit risk and fraud modelling

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- ❖ Pattern Recognition Models
- ❖ Segmentation and Associative Algorithms

Applications of Decision Trees and Regression Modelling in AML, credit lending and risk management

- ❖ Advanced algorithms of decision tree modelling
- ❖ Advanced Regression Modelling Techniques:
- ❖ Multiple Linear Regression modelling
- ❖ Multinomial Logistic Regression modelling

Advanced Artificial Machine Learning Algorithms and Models:

- ❖ Predictive analytics - Neural Network: Case Studies and its applications
- ❖ Pattern discovery – Segmentation and Cluster analysis
- ❖ Association Rule Mining and Network Analytics - Sequence Detection modelling
- ❖ Case Studies and its applications

Model Evaluation: Choosing the champion model for deployment

- ❖ Misclassification and Accuracy measures
- ❖ Average squared errors

Model Deployment and Model Management

- ❖ Best Practices and applications

Practical application: Applying principles of analytics using analytics software

FOR WHOM

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Participants who may have some background in credit risk and fraud analytics will find this course offering refreshing insights, especially in the area of predictive, descriptive and social network analytics and how these methods have helped others achieve competitive advantage.

ABOUT THE TRAINER

Mr. Ng Jinsheng joined IBM SPSS in 2008 as an Executive in Training and Consulting after his graduation from the National University of Singapore (NUS) with a Degree in Statistics and Applied Probability. During his stay in IBM SPSS, he has trained hundreds of participants from the public service and private sector in statistical and data mining concepts, tools and applications in solving business problems. He has also led consulting projects and worked with C-level executives in addressing pressing business issues during which he received many praises and testimonies. During his working with IBM SPSS, Mr. Ng Jinsheng also completed his Masters of Science in Knowledge Management [M.Sc(KM)] from the Nanyang Technological University (NTU) and graduated one of the top in his cohort with a Dean’s List award in academic excellence. He later joined SAS Institute as an Education Specialist in the Training department, and thereafter as a Senior Associate in professional Consulting services, where he won the “Excellence in Service” Award for founding and championing the inaugural Inter-Varsity Analytics Competition in 2014 (Singapore). Throughout his working experience with Training and Consulting Companies, he has had the privilege to be able to work with both local and international Banks in the arena of financial analytics and he is also personally involved in fraud analytics modelling and deployment work at the National level.

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An academic paper he has co-authored was nominated for the Best Paper Award in the 20th International Conference on Computers in Education in 2012. He is currently a founding member of AnaVantage Management Consultancy LLP, and lectures and trains at Tertiary Institutions in Singapore in the area of business statistics, data mining and big data analytics, and develops analytics courses for undergraduate programmes in Singapore. Professionally recognized by the Project Management Institute (PMI) as a Certified Associate in Project Management (CAPM), he is also an IBM Business Analytics Certified Specialist in IBM SPSS Modeler (Professional) and IBM SPSS Statistics, as well as SAS Certified Predictive Modeler using SAS Enterprise Miner and SAS Certified Business Analyst using SAS 9: Regression and Modeling.

Professionally as a Trainer, Jinsheng possessed an Advanced Certificate in Training and Assessment (ACTA) conferred by the Workforce Development Agency of Singapore (WDA) and a proud recipient of the prestigious “Excellence in Teaching” Award (EIT) conferred by the Singapore Polytechnic (SP) during the Annual Excellence in Teaching and Training Convention in 2015. He is also conferred the title of an Associate Adult Educator (AAE) by the Institute of Adult Learning (IAL), Singapore in 2016, an Adult Educators’ Professionalisation recognition which awards pedagogical and professional excellence in teaching and training.