quest for knowledge
q4k.com

Embedded Analytics, Intelligent Apps & AI Automation

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W. www.q4k.com
E. info@q4k.com
P. +31 76 57 21 99
P. +32 2 808 99 46
P. +46 8 525 07 005

COURSE DESCRIPTION

OVERVIEW

Although analytics in many organizations is well established, it is still the case that perhaps no more than 25% of employees make use of reports and dashboards from BI tools with even fewer using machine learning (ML) models or AI. There is still a long way to go if companies are to realize the promise of using ML and AI to automatically prevent problems, seize opportunities and continually optimize business processes in everyday business operations.

The vision that many executives have is to make use of BI, ML and AI to increase the level of automation and to enable everyone in the company to contribute towards improving business performance. They want to create an 'always on' data and AI-driven intelligent business where BI and ML models are deployed right across the business so that every person, and every application, in the enterprise is able to leverage the right insights at the right-time in every activity to help them contribute to the overall performance of the business. Therefore, it should be possible to embed BI and ML models into operational business processes to guide and drive decisions and actions in everyday business operations. It should also be possible to automate more using self-learning AI. This would move organizations towards creating intelligent applications, and utilizing AI driven automation for right-time business process optimization and decision management. This includes embedding analytics into all customer facing applications and websites to enable a personalized customer experience as well as partners and suppliers being guided by BI, alerts, and recommendations. The objective is to move towards automated, self-learning, AI-driven business operations.

To make this possible requires:

- Trusted and compliant data
- BI web services to integrate BI into operational business processes
- JavaScript to embed BI into websites
- Developing and deploying ML models for use in automatic real-time scoring and analysis
- Real-time monitoring of operational events to detect exceptions and opportunities as they happen
- On-demand and event driven data integration for real-time analytics
- On-demand and event driven reporting
- Rule engines to make automatic decisions and take automatic actions
- Using prescriptive ML models for automated alerts
- Using prescriptive ML models for live recommendations
- Reward oriented re-enforcement learning
- Guided analytics
- Dynamically guided smart processes
- Data governance for trusted data
- Live dashboards and scorecards for situational awareness
- Dynamic event-driven budgeting and planning

COURSE DESCRIPTION

This 1-day course shows how you can embed BI, ML and AI-automation into applications and processes to make your company data and AI-driven. The purpose is to achieve 'always on' business optimization, dynamic planning by automating, guiding and empowering employees, business partners, suppliers and customers to make better decisions to improve business performance. It provides a roadmap and methodology to creating the right-time intelligent enterprise by taking an in-depth look at the technologies and methodologies needed to make it happen.

WHY ATTEND

You will learn how to:

- Justify, architect, and integrate AI, ML models and business intelligence into operational business processes and applications as part of a coordinated program to improve business performance
- Use automatic real-time event processing to monitor operational events as they happen to detect problems, identify opportunities, and drive and guide business operations.
- Create intelligent apps and how to use AI to automate tasks
- Use real-time data integration, on-demand decision services, prescriptive ML models as a service, BI web services, queries, real-time decision engines, enterprise alerting and business process automation to put analytics to work in driving every-day business operations

WHO SHOULD ATTEND

This course is intended for business and IT professionals responsible for information delivery, business integration and leveraging BI, ML and AI in operational environments.

COURSE DESCRIPTION

PREREQUISITES

This course assumes that you have already built analytical systems and are now looking to leverage insights produced in everyday operations.

INSTRUCTOR

Mike Ferguson is the Managing Director of Intelligent Business Strategies Limited. As an independent IT industry analyst and consultant, he specializes in BI/Analytics and data management. With over 40 years of IT experience, Mike has consulted for dozens of companies on BI/Analytics, data strategy, technology selection, data architecture, and data management.

Mike is also conference chairman of Big Data LDN, the fastest-growing data and analytics conference in Europe. He has spoken at events all over the world and written numerous articles.

Formerly he was a principal and co-founder of Codd and Date Europe Limited – the inventors of the Relational Model, a Chief Architect at Teradata on the Teradata DBMS.

He teaches popular master classes in Data Warehouse Modernization, Big Data Architecture & Technology, Centralised Data Governance of a Distributed Data Landscape, Practical Guidelines for Implementing a Data Mesh (Data Catalog, Data Fabric, Data Products, Data Marketplace), Real-Time Analytics, Embedded Analytics, Intelligent Apps & AI Automation, Migrating your Data Warehouse to the Cloud, Modern Data Architecture and Data Virtualisation & the Logical Data Warehouse.

COURSE OUTLINE

01   AN INTRODUCTION TO DATA-DRIVEN BUSINESS OPTIMIZATION

This module looks at how embedded analytics, ML and AI-automation can help companies improve efficiency and effectiveness of decision making in operational business processes. It looks at the business benefits of embedded analytics, intelligent apps and AI automation, where businesses want to utilize these capabilities in core applications and processes at what is needed to make it possible.

- What do we mean by embedded analytics and intelligent apps?
- What is AI automation and what can it do?
- Business benefits – Why use embedded analytics, event-driven prescriptive ML models, and AI-automation?
- How can it help optimize business and improve effectiveness?
- Examples and case studies of using embedded analytics, intelligent apps and AI automation in practice, e.g. IoT analytics, fraud detection, personalizing the customer experience, supply chain optimization
- What's needed to get started?
- Key mistakes and how to avoid them

02   TECHNOLOGIES AND TOOLS FOR THE DATA-DRIVEN INTELLIGENT ENTERPRISE

This module looks at the technology components to consider when implementing embedded analytics, intelligent apps, and AI-automation.

- BI as a service for on-demand insights
- Predictive ML model services for on-demand scoring
- Prescriptive ML model services for on-demand recommendations
- MLOps for ML model management
- AI Automation tools
  - Process mining
  - Robotic Process Automation
  - AI-driven orchestration, e.g., IBM Watson Orchestrate
- Using ML models embedded in databases
- Augmented analysis for assisted rapid problem identification
- Embedding ML models and BI services into operational applications to create intelligent apps
- Streaming analytics pipelines on real-time data
  - Event driven data integration
  - Event-driven prescriptive ML for automated actions
- Using real-time data and ML for situational awareness dashboards
- Decision / rule engines for automated decision management
- Automated Action services
- Pushing alerts and recommendations to mobile workers
- The role of business integration technologies such as REST, GraphQL, Enterprise Service Bus and Business process management
- Low code / no-code automation using ML and tools like Microsoft PowerAutomate

COURSE OUTLINE

03 ARCHITECTURES AND METHODOLOGIES FOR CREATING THE SMART ENTERPRISE

This module looks at the architecture options for integrating analytics and ML into applications and implementing event processing for operational decision management. It also looks at the pros and cons of these options and at methodologies for doing it.

- Embedding analytics and ML – why a single approach is not enough
- A methodology to successfully implement embedded analytics and ML
- Understanding user communities, roles and the applications they use
- Understanding business processes, process events and external events
- Right-time operational analytics requirements - who needs what BI, ML and AI automation and when?
- Integration options for internal and external exploitation of right-time intelligence, prescriptive analytics and automation
  - Integrating real-time insights into dashboards and planning
  - Using on-demand analytical and automated decision services in a SOA
  - Integrating BI, ML and automation with business process management (BPM) software
  - Automatic decision services
  - AI-driven orchestration and actions
  - Edge computing – real-time analytics at the edge
- The implications of right-time embedded analytics and ML on existing analytical systems
- Pros and cons of different options
- Identifying the best architecture option for role-based business optimization

04 EMBEDDING ANALYTICS AND AI INTO OPERATIONAL APPLICATIONS AND PROCESSES

This module looks at why embedding analytics in applications and processes and introducing automation is becoming mission critical to reducing costs and improving efficiency. It looks at how to create intelligent apps and processes by invoking analytical ML and AI services from applications and business process management software. It focuses on how to use orchestration to leverage analytics, ML and AI automation and how to monitor cost and efficiency of business processes.

- Integrating BI, ML and AI into operational applications and business processes using on-demand web services
- Automating human tasks using AI-driven robotic process automation and intelligent document processing
- The power of human and AI-driven orchestration
- Automation building blocks
- The AI-driven automation process
- Human and AI-driven decision and action automation

COURSE OUTLINE

- Monitoring operational business processes
  - Change Data Capture
  - Using event-driven data integration and in-memory data
  - Streaming analytics
  - Using predictive models for automated analysis, scoring and pattern detection
  - Using rules engines for automated decision management
  - Data streaming technologies - Amazon Kinesis, Azure Event Hubs and IoT Hubs, Google Cloud Pub/Sub, Kafka, Solace
  - Streaming analytics technologies - Google Cloud DataFlow, IBM Streams, Kafka Streams, SAS Stream Processing, Spark Streaming, Striim, Ververica Apache Flink, VoltDB
- Deploying ML models at the edge to monitor IoT devices and optimize processes
- Optimizing operational processes using prescriptive analytics and live recommendations

05 USING EMBEDDED ANALYTICS, INTELLIGENT APPS AND AI AUTOMATION IN CRM AND SUPPLY CHAIN OPERATIONS

This module looks at how to create intelligent apps and processes in front-office and back-office business operations. It discusses how right-time analytics, ML and AI can be leveraged across all customer touchpoints for targeted and personalized customer marketing, sales, and service and for improving customer retention and satisfaction while lowering cost. It also looks at how to optimize supply chain operations using prescriptive analytics for alerting and automated actions.

- Building a customer data platform (CDP) for single view of the customer
- The customer intelligent front office - using embedded BI, ML and AI-Automation to improve marketing, sales and service
- Leveraging automated analysis for alerting and recommendations to guide front-office operations
- Integrating analytics and ML with multi-channel campaign management systems
- Using operational BI, ML and decision automation to support a mobile sales force
- AI-driven Chatbots in customer service
- Acting on insights from mobile devices
- Using real-time and prescriptive analytics in fraud detection
- Continuous monitoring of supply chain performance and operational cost
- Automating supply chain optimization using demand intelligence
- Right-time alerting in supply chain operations

COURSE
OUTLINE

0 6   **ACTIVE DYNAMIC PLANNING AND MANAGEMENT FOR
CONTINUOUS OPTIMIzATION**

This module shows how business integration software can be used to integrate BI, ML and AI automation services with business planning to dynamically manage business performance at strategic and operational levels

- Integrating prescriptive analytics and on-demand operational BI into planning scorecards with KPIs for live alerts and operational performance monitoring
- AI-assisted dynamic planning - taking action to solve operational business problems as they happen to keep your business optimized

PRICING

The fee for this course is EUR 725,00 (+VAT) per person.

We offer the following discounts:

- 10% discount for groups of 2 or more students from the same company registering at the same time.
- 20% discount for groups of 4 or more students from the same company registering at the same time.

Note: Groups that register at a discounted rate must retain the minimum group size or the discount will be revoked. Discounts cannot be combined.

COURSE DATES

27 NOVEMBER 2024   **AMSTERDAM**