AI and the New World of Data Structure

The AI Data Analyst in Modern Organizations

Why Attend

The Data Structure Imperative

Leading in the age of AI-driven business analysis is the key to a high performing organization in the future. Understanding the emerging world of data structures equips participants with frameworks, tools, and skills to handle structured, semi-structured, and unstructured data effectively. Organizations need AI business analysts ready to implement practices that streamline operations, improve customer experience, and position their organizations competitively in data-centric markets.

AI Transformation Enables Digital Transformation

Building Organization Data Capability

Managing data structures intelligently, reduces risks, and unlocks insights. Equipping an organization with frameworks and AI-driven strategies, plus upskilling employees enhances compliance, governance, and analytic power. Companies benefit from reduced costs, stronger data protection, and improved decision-making capabilities.

Improve AI Data driven Organizational Decision Making

Emerging world of data awareness enables organizational decision-making by integrating AI across diverse data environments. By understanding structured, semi-structured, and unstructured data challenges, the organization can design solutions that enhance data quality, protect sensitive assets, and deliver actionable insights. The impact is felt in faster, evidence-based decisions, greater agility, and more reliable analytics. Change leaders, capable of guiding their organizations toward smarter strategies and stronger competitive advantage will emerge.

Preparing Tomorrow's AI Data Analyst Today

AI business analysts, managers, and consultants thrive in a data-driven, AI-enabled environment. It focuses on helping professionals understand the unique challenges of different data structures, apply AI technologies to solve them, and build governance and protection frameworks. The course emphasizes the combination of technical, analytical, and soft skills required for the AI business analyst role. Its ultimate purpose is to create professionals who drive better decisions.

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Learning Objectives

Professionals who attend this course can expect to learn how to apply the most recent innovative developments in AI business analytics to the 3 types of data structures and their uses, specifically they will be able to:

- Describe the key emerging analytics managers use today.
- Explain the difference between AI data structure analysis, data science, and data analytics
- Explain agentic analytics for data structure analysis
- Choosing multiple criteria for the best AI based decision result
- Applying analytics to identify the 3 data structure types.
- Identify specific analytics for the 4 layers of management and data structures.
- Know how to position the analytics at key decision points.
- Verify that the analytic is providing management insight.
- Comparing the results of multiple analytics as applied to a decision.
- Using analytics to predict what might happen next.

This professional training session provides a hands-on, skill-oriented working knowledge of the emerging innovative data structure techniques that managers and analysts should consider and use. The learning approach uses discussions, interactive exercises, and group exercises that focus on outcomes that lead to organization success. Participants can apply this learning as soon as they get back to their office.

What techniques will you learn?

- Applying the appropriate data structure approach to the 4 layers
- How to best utilize the 3 data structure types
- The good, and bad using Gen AI
- Analytics and methods that support the 3 data structures
- Applying agentic and AI workflows

Where can you use these techniques?

Innovative analytics supports multiple needs of an organization from strategy to operations including such issues as choosing alternatives, process performance, consolidation, portfolio management, organization alignment, and more.

Who should attend?

Managers, Process Analysts, Business Analysts, Managers, Professionals, IT Specialists, IT and Business Architects.

Contact Knowledge Consultants, Inc. at 847-543-1225 or email requests to knowhow@knowledgebiz.com

AI and the New World of Data Structure

Adding Value to the Digital Asset for High Performance

Day One

Day 1 Theme: AI Business Analysis, Analytics and Data Structures

The hot topics today are digital transformation, neural nets, generative AI, and machine learning. All of these are a part of business analysis. Digital transformation requires thinking about analysis and analytics that leverage all the digital data collected. To really make digital transformation of high value, AI transformation is needed to leverage the digital world. The focus today is applying analysis with emerging analytics to data structure that support critical and key decisions.

Section 1 –AI and AI Business Analysis

- The many types of analysis perspectives today
- The 4-layer approach to management insight
  - Landscape, Strategy, Tactics, Operations
- The need for AI based Business Analysis
- AI Business Analysis and the AI Practitioner
- Business Analysis and importance of data structures today
- The focus of AI Data structure analysis

Video and Discussion: AI Business Analytics and AI Business Analysis

Section 2 – AI Business Analysis and Decision Making

- Problem solving and opportunities by layer
- Business analysis and problem resolution
- The point solution approach
- The use of business models in problem solving
- AI Analytics and business models

Exercise: AI Analytics and Balanced Scorecard Strategy Maps

Section 3 – AI Business Analysis, Analytical Insight and Decisions

- Analytic Insight and better decision making for:
  - Alternatives, capabilities, strategies, projects etc.
- A driver diagram model explains the forces on a decision
- Using critical thinking for AI insight
- Agentic AI, AI Workflows and Analytic ensembles
- Property analysis and impact for insight
- Influence diagrams, properties, and decisions

Video and discussion: The Value of Decision AI Decision Analysis

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Day Two

Day 2 Theme: AI and Structured Data

Machine learning showed up early on in Business analysis with some familiar business statistics. Correlation and regression methods have been implemented in many tools and are easily done in Excel using trend features. However to do predictive analysis on structured data that is better than classic trend analysis you need neural nets. Also, hybrid analytics (Subjective/Objective analytics) have emerged as a valuable predictive tool. Core structured data AI analysis provides considerable insight into the movement of financial and operational performance indicators in an organization.

Section 4 – Forecasting Using Correlation and Regression for Prediction

- Machine Learning and Existing Data Series Analysis
  - Correlation as an analysis method
  - Regression is a form of machine learning.
- KPIs - What a manager chooses to look at for analysis
- What is hybrid analysis?
- Using subjective trend data?
- Example: Classic *Sales trend vs time analysis*

Exercise: Correlation Analysis

Section 5 – Correlation Matrices

- What are they?
- How are they useful?
- Interpreting a correlation matrix.
- Issues and advantages of correlation
- Tracking correlation over time.

Video and Discussion: Understanding Correlation.

Section 6 – Affinity and Neural Net Analysis

- Affinity analysis – measuring the strength of a relationship
- Using affinity for recommendation.
- Predictive Neural Net
- Classification Nets
- Example – Using Neural Nets for Process Performance Prediction

Exercise: For what would you use a neural net?

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Day Three

Day 3 Theme: AI and Semi-Structured Data

Today the emphasis is changing to extensive use of artificial intelligence neural nets to help diagnose and predict factors of significance to managers. Artificial intelligence (AI) augments and replaces human intelligence where it makes sense to do so. Much data in an organization consists of 2- and 3-word phrases. Also, there is not much context with the phrases unless you include a detailed description. However, there are AI phrase analytics based on NLP such as keyword analysis and sensitivity analysis. Plus, phrases describe the structure of the organization, and this can be analyzed with AI models.

Section 7 – AI Ranking Approaches

- One, Two and three variable ranking approaches
- Criteria and property variable analysis
- The 4- box for interpretation of the three variables
- The technique of composite ranking -more than three variables
- An example: A composite ranking of more than three variables

Exercise: Using AI based ranking methods

Section 8 –- AI and Criteria Influence

- Neural nets to analyze influence
- Which criteria have the most influence?
- What features have the most influence?
- Identifying the performance property of greatest influence
- Using hybrid data with phrase analysis

Demo and Discussion: Using AI Influence Analytics

Section 9 – Organization components and Property analysis

- Using property analysis
  - *Objective and subjective Properties*
  - *Using Organization Properties*
  - *Comparative analysis based on properties*
- Property analytics for performance
  - *Analyzing Barrier and Accelerator Insight*
  - *DNA diagrams relating properties*
  - *Capability assessment with properties*

Demo and Discussion – Applying property analysis

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Day Four

Day 4: Theme: AI and Unstructured Data

Achieving a high-performance organization requires advanced analytic techniques for understanding the impact of innovative analytics. Most data in an organization is unstructured and embedded in documents, email, forms, reports and so on. This collection of unstructured data includes other media such as audio, video, graphics, pictures and so on. AI analytic techniques take advantage of that rich source of data. These analytics use linguistic analysis (NLP) to search for insight items, compose basic documents, and in many cases create graphics for various functions in the organization.

Section 10 – Emerging Semantic Analytics

- Internal Sentiment Analysis – What do your employees think?
- External Sentiment Analysis - What do customers think?
- Keyword analysis – what is the emphasis of a document.
- Comparative semantic analysis – Consolidating processes

Demo and Discussion –Sentiment Analysis of Documents

Section 11 – Gen AI and Unstructured Data Analysis

- Research with Gen AI
- How big should a prompt be?
- What is different between different Gen AI products
- Typical uses of Gen AI today
- Reducing repetitive work with Gen AI

Exercise Case: Example - Using Gen AI for Research

Section 12 – Gen AI – Mining for Insight:

- Analyzing customer complaints
- Extracting competitive data with Gen AI
- Insight from product data
- Market analysis with Gen AI
- Competitive intelligence and Gen AI

Exercise – Conducting Gen AI PESTEL Analysis

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Day Five

Day 5 Theme: Advanced use of Emerging Analytics

Every day operational processes handle large volumes of unstructured data. Data that is not quantitative and nicely organized into matrices or time series that you can use well known analysis and analytic techniques to support decisions. Handling unstructured data has been a big problem until recently. The advent of Generative AI and Deep Learning have provided useful tools in extracting significant parts of unstructured data for process support.

Section 13 – Issues with AI Capabilities Today

- Issues with scaling up neural nets to deep learning
- Costs, size, complexity, scope, impact, skills, risk
- The need for increased rigor in business analysis
- The lack of semi-structured methods, Model, and tools
- Bringing Large Language Models in house

Video and Discussion:

Section 14 – Advanced uses of Generative AI

- Generative AI components
  - Foundation Models
  - Large Language Models
  - Generative Neural Nets
- Good Uses of Generative AI today
  - Summarization, Text generation, Research, Process Augmentation, Marketing
- Business Issues with generative AI
  - *Too much, Not enough Incomplete, Inaccurate, etc.*
- *Should you develop a custom LLM?*

Video and Discussion: – Can you trust Generative AI?

Section 15 – The Future - Using Chaos Theory for Business Analysis

- The quick overview of chaos theory
- Why use chaos techniques
- Example - Chaos and portfolio analysis

Video and Discussion: Uses of Chaos Techniques

Course Questions and Wrap