



Executive Summary



AI+

Business Intelligence
Practitioner™

TABLE OF CONTENTS

Introduction	1
Certification Prerequisites	1
Who Should Enroll?	2
Certification Goals and Learning Outcomes	2
The Impact of AI on Modern Business Intelligence Strategies	3
What is Next for AI?	4
How AI Revolutionizes BI in Organizations?	4
How AI Addresses Current Challenges in Business Intelligence?	5
How Industries are Adopting AI in BI?	6
How to Integrate AI into BI Strategies?	6
Module 1: Introduction to AI and BI Fundamentals	7
Module 2: Python for AI-Driven Business Intelligence	7
Module 3: Data Preparation and Feature Engineering with AI	8
Module 4: Machine Learning (ML) for Business Intelligence	8
Module 5: Advanced AI and Generative AI for BI	9
Module 6: Statistical Analysis with AI Tools	9
Module 7: AI-Powered Business Intelligence Tools	10
Module 8: Prompt Engineering for AI-Driven BI	10
Module 9: Communication Skills	11
Module 10: Capstone Project	12
How Can AI CERTs Help Build an AI-Ready Culture?	13

Introduction

AI+ Business Intelligence Practitioner certification is designed to equip you with the skills to leverage AI and BI tools for enhanced data-driven decision-making. You will explore key concepts of AI and BI, data preparation techniques, machine learning, and advanced AI methodologies such as deep learning and generative AI. Hands-on experience with tools like Python, Power BI, Tableau, and other BI platforms will help you focus on data visualization, statistical analysis, and predictive modeling.

Throughout the certification, you will apply AI and BI techniques to real-world business scenarios, understanding how these technologies drive business growth. By the end, you will have a solid grasp of how to integrate AI into business intelligence practices, culminating in a capstone project that showcases your ability to apply what you've learned in a practical setting.

This certification will cover:

- Introduction to AI and BI Fundamentals
- Python for AI-Driven Business Intelligence
- Data Preparation and Feature Engineering with AI
- Machine Learning (ML) for Business Intelligence
- Advanced AI and Generative AI for BI
- Statistical Analysis with AI Tools
- AI-Powered Business Intelligence Tools
- Prompt Engineering for AI-Driven BI
- Communication Skills
- Capstone Project

Certification Prerequisites

- **Basic Computer Skills:** You should be familiar with using software applications, such as word processors, spreadsheets, and web browsers.
- **Foundational Data Concepts:** While not mandatory, a basic understanding of data analysis will be beneficial in grasping key concepts covered in the certification.
- **Open to All:** This certification is suitable for individuals at any expertise level who are interested in AI, Machine Learning (ML), and Business Intelligence (BI).

Who Should Enroll?

This certification is ideal for:

- **Data Analysts:** Professionals looking to enhance their skills with AI and BI tools for better decision-making.
- **Business Intelligence Professionals:** Individuals who want to integrate AI techniques into their BI practices.
- **Aspiring Data Scientists:** Those interested in leveraging AI and machine learning for data analysis and predictive modeling.
- **Managers and Executives:** Leaders who want to make informed, data-driven decisions using AI and BI technologies.
- **IT Professionals:** Those seeking to expand their knowledge of AI and BI applications in business environments.
- **Marketing and Sales Professionals:** Individuals looking to use AI and BI to optimize strategies and improve customer insights.

Certification Goals and Learning Outcomes

By the end of this certification, you will be able to:

- **Apply AI and BI Tools:** Effectively use AI and Business Intelligence platforms like Python, Power BI, and Tableau to analyze and visualize data.
- **Integrate AI into Business Intelligence:** Understand how to incorporate AI techniques, such as machine learning and predictive modeling, into BI processes.
- **Analyze Complex Data Sets:** Develop the skills to analyze large and complex data sets to generate actionable insights for business decisions.
- **Implement Predictive Analytics:** Build and deploy predictive models that can help forecast future trends and inform business strategies.
- **Understand Advanced AI Techniques:** Gain hands-on experience with advanced AI methods, including deep learning and generative AI, in a business context.
- **Enhance Data-Driven Decision-Making:** Utilize AI-driven insights to support better, data-backed decision-making processes across various business functions.
- **Design Data Visualizations:** Create meaningful and impactful data visualizations to communicate insights clearly to stakeholders.

The Impact of AI on Modern Business Intelligence Strategies

AI is revolutionizing modern business Quality Assurance (QA) strategies by enhancing testing efficiency, accuracy, and scalability. With the ability to automate repetitive tasks, predict defects, and optimize testing workflows, AI has become an essential tool for businesses looking to stay competitive.

The global adoption of AI in QA is evident, with North America leading the way with a 28.8% share, followed by Asia-Pacific at 25%, and Europe at 24.3%. The United Kingdom is experiencing robust growth at 14.1%, reflecting its increasing focus on AI-driven testing solutions. Meanwhile, Latin America and the Middle East and Africa (MEA) regions each account for 5.4%, showcasing diverse regional advancements in AI adoption.

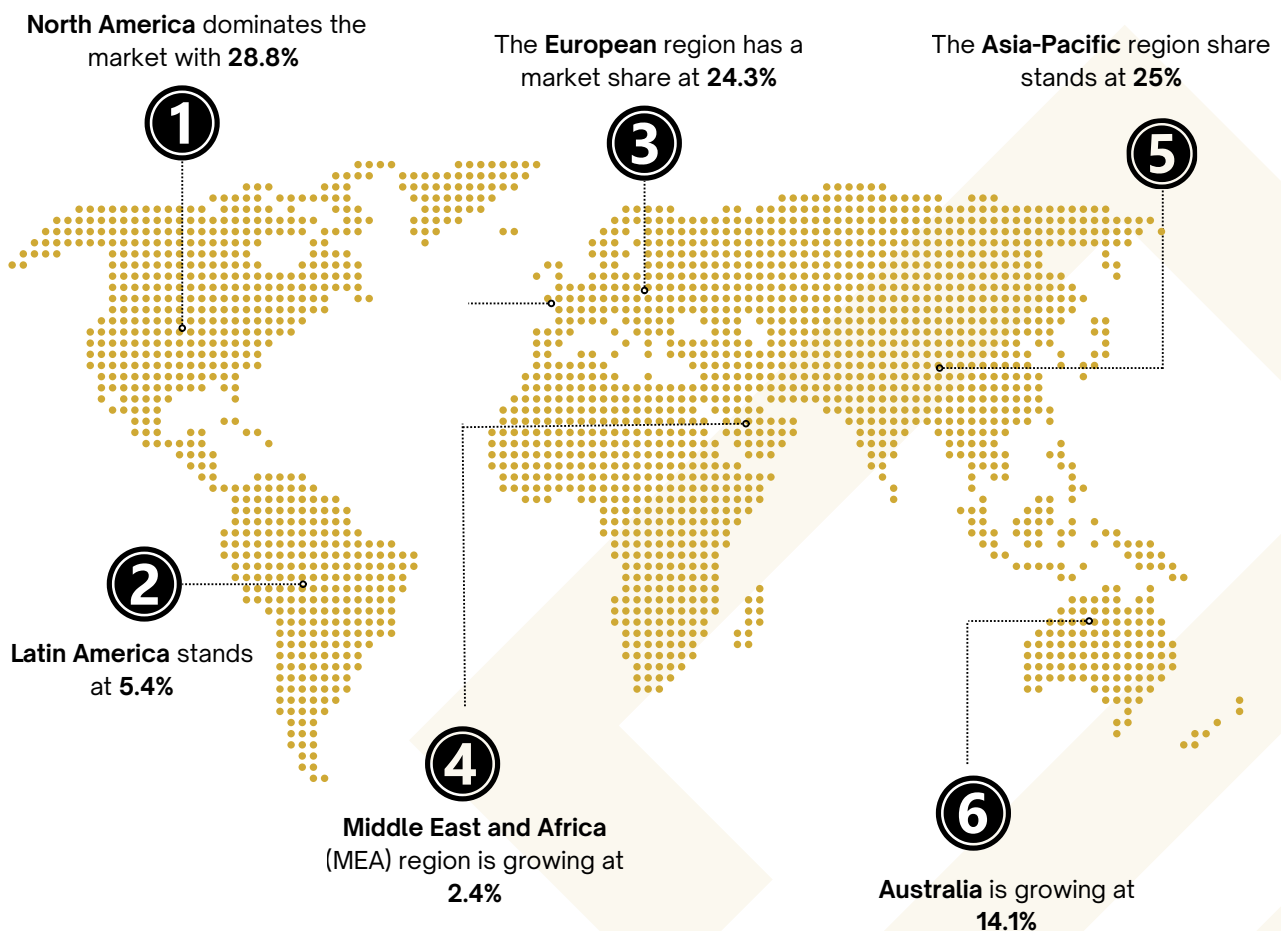


Figure 1: Market Share of AI from a Regional Perspective

These statistics highlight the growing global shift towards integrating AI in QA processes, where businesses are using AI to drive smarter, faster, and more reliable testing strategies, ultimately enhancing product quality and customer satisfaction.

What is Next for AI?

As AI continues to evolve, its capabilities in business intelligence are set to expand significantly. We can expect AI to further enhance decision-making processes, enabling organizations to not only analyze vast amounts of data but also to predict trends and behaviors with increasing accuracy. The integration of AI with emerging technologies like cloud computing and the Internet of Things (IoT) will open new opportunities for real-time data processing and improved insights. Furthermore, advancements in machine learning and deep learning will drive the development of more sophisticated AI tools, making it easier for businesses to harness complex data. Moving forward, the focus will also shift toward ethical AI, ensuring that algorithms are transparent, fair, and compliant with regulations. This next phase of AI innovation will empower businesses to gain a competitive edge and adapt quickly in an ever-evolving digital landscape.

How AI Revolutionizes BI in Organizations?

AI is rapidly transforming Business Intelligence (BI) by enabling organizations to extract more valuable insights from their data. Through advanced machine learning algorithms and automation, AI is streamlining BI processes, improving decision-making, and driving greater efficiency. As businesses continue to adopt AI, it empowers them to gain a competitive edge by utilizing data more effectively and in real-time.

Below are a few ways in which AI revolutionizes BI in organizations:

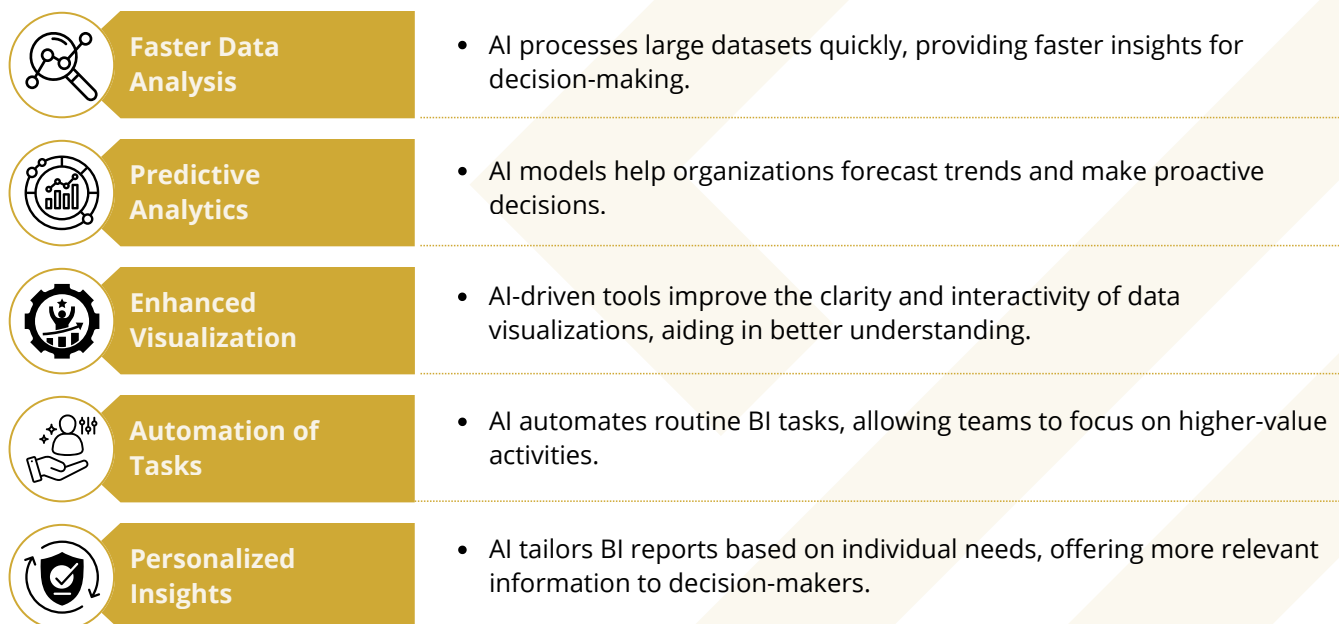


Figure 2: Exploring How AI Revolutionizes BI in Organizations

AI is significantly enhancing BI practices by providing faster, more accurate insights and automating data-related tasks. As AI continues to evolve, its role in revolutionizing BI will only expand, enabling organizations to leverage their data for smarter decision-making and sustained growth.

How AI Addresses Current Challenges in Business Intelligence?

AI is transforming Business Intelligence (BI) by addressing key challenges faced by organizations today. As data grows in complexity and volume, traditional BI tools often struggle to keep up, but AI enables businesses to extract more accurate insights, automate processes, and enhance decision-making. By leveraging machine learning, natural language processing, and predictive analytics, AI helps overcome these challenges, empowering businesses to make smarter, data-driven decisions.

Below are five key challenges in Business Intelligence and how AI addresses them:

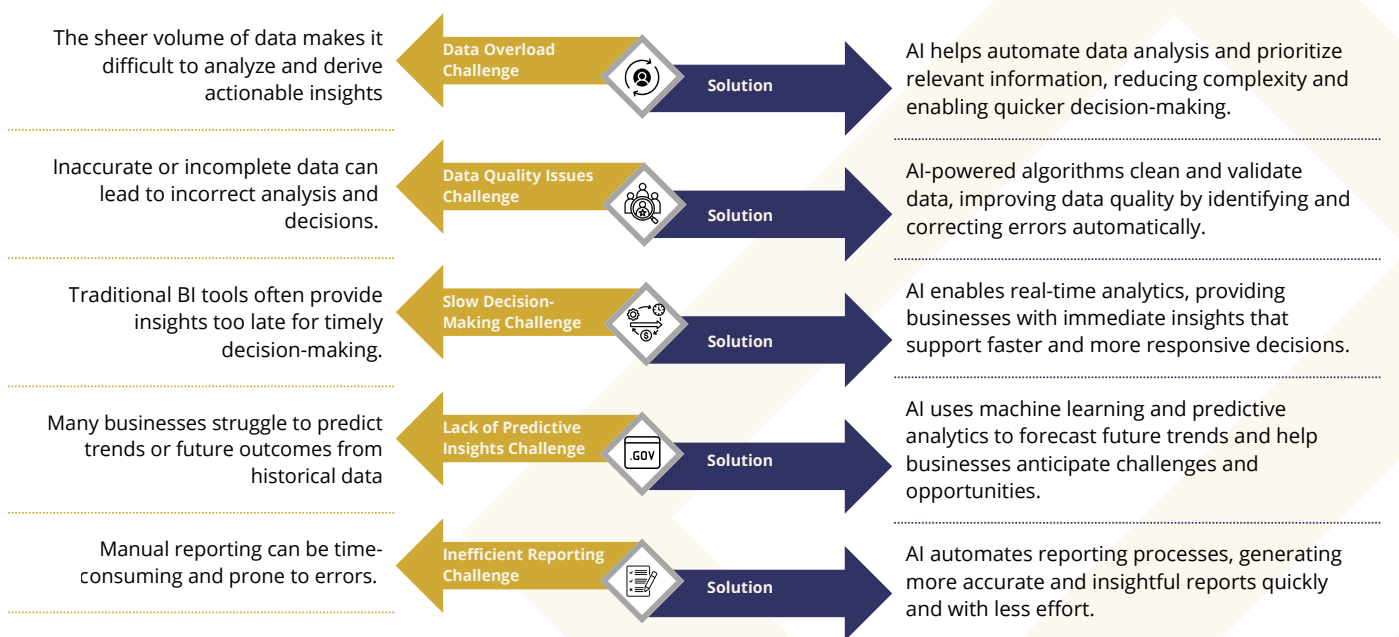


Figure 3: AI Addressing Current Challenges in BI

How Industries are Adopting AI in BI?

Industries are increasingly adopting AI in Business Intelligence (BI) to enhance their ability to process and analyze data more effectively. By integrating AI with BI tools, businesses can automate the collection and analysis of large datasets, uncover hidden patterns, and gain actionable insights faster than traditional methods allow. In sectors like retail, AI is being used to personalize customer experiences and optimize inventory management by predicting trends. In healthcare, AI-driven BI tools help in diagnostics, patient care, and managing vast amounts of medical data. Finance industries utilize AI to detect fraud, automate reporting, and forecast market shifts, while manufacturing benefits from predictive maintenance and process optimization. The integration of AI into BI allows organizations to make more accurate, timely decisions, driving greater efficiency, cost savings, and innovation across different sectors.

How to Integrate AI into BI Strategies?

Integrating AI into Business Intelligence (BI) strategies allows organizations to enhance their data analysis, streamline decision-making, and improve overall business efficiency. AI technologies, such as machine learning and natural language processing, can help organizations gain deeper insights from their data, predict future trends, and automate routine tasks. Successful integration of AI into BI requires careful planning, the right tools, and a clear understanding of business goals. Below are key steps to effectively integrate AI into BI strategies:

- ✓ Ensure AI supports specific business outcomes
- ✓ Select tools that integrate AI for enhanced analytics
- ✓ Use clean data to improve AI insights
- ✓ Test AI on a small scale before full implementation
- ✓ Seamlessly merge AI with current BI tools
- ✓ Use AI to forecast trends and make data-driven decisions
- ✓ Automate routine data tasks to save time
- ✓ Continuously monitor and refine AI models

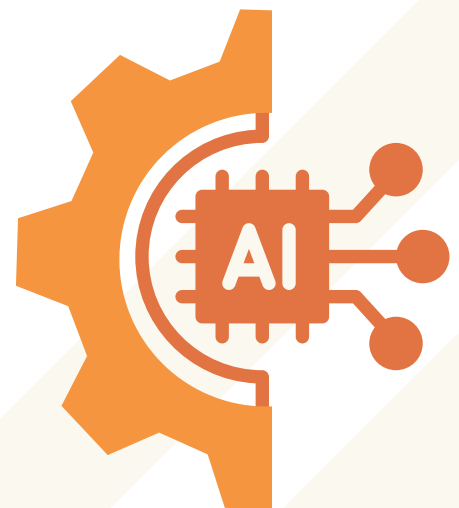


Figure 4: Integrating AI into BI Strategies

Module 1: Introduction to AI and BI Fundamentals

In today's rapidly evolving business landscape, understanding how Artificial Intelligence (AI) and Business Intelligence (BI) work together is crucial for staying competitive. As organizations strive to optimize their operations and make data-driven decisions, AI and BI serve as essential tools that enable deeper insights into past and present data while also predicting future trends. With AI simulating human intelligence and BI focusing on data-driven methodologies, mastering these technologies equips you to make smarter decisions, automate processes, and drive innovation within your organization.

This module provides a foundational understanding of AI and BI, highlighting their transformative impact on businesses. You will learn the core concepts of Business Intelligence, including how to apply data-driven decision-making frameworks to achieve business goals. Additionally, this module covers the data analysis process and demonstrates how AI plays a pivotal role in converting raw data into actionable intelligence. Finally, you will explore emerging BI trends and challenges, helping you navigate the rapidly evolving landscape of business intelligence.

Module 2: Python for AI-Driven Business Intelligence

Python has become a fundamental tool in AI-driven Business Intelligence, making it essential for anyone looking to harness the power of data analytics and machine learning. Its versatility and extensive libraries empower you to process large datasets, create predictive models, and visualize complex data patterns with ease. Understanding how Python integrates with BI platforms like Power BI or Tableau will allow you to automate reporting, optimize operations, and turn raw data into actionable insights. Mastering Python for AI-driven BI ensures you can stay ahead of the curve in today's data-driven business environment.

This module begins by establishing a solid foundation in Python programming, covering the essential syntax and key programming concepts you need to understand. You'll then explore advanced Python libraries critical for BI, including Pandas, NumPy, and Scikit-learn, which help with data manipulation, analysis, and machine learning model development. The module also focuses on data visualization with Python, using tools like Matplotlib and Seaborn to create impactful visualizations that tell a compelling story with data. To solidify these skills, the module includes hands-on activities that allow you to apply Python to real-world BI challenges, giving you the tools to make smarter, data-driven business decisions.

Module 3: Data Preparation and Feature Engineering with AI

Effective data preparation and feature engineering are essential when using AI for Business Intelligence. Inaccurate or poorly prepared data can lead to misleading insights and faulty decision-making. By mastering data collection, cleaning, and feature engineering, you ensure that AI models are fed with high-quality, reliable information. This module helps you understand the critical role data preparation plays in improving model performance, which ultimately enhances the quality of the insights derived from AI-driven BI systems. By learning these techniques, you'll be equipped to transform raw data into actionable intelligence that drives business decisions.

This module covers the essential steps in data preparation and feature engineering. You'll start with Data Collection Techniques, learning how to gather diverse and relevant data for AI projects. Next, you'll explore Data Quality & Evaluation, focusing on assessing the consistency, completeness, and accuracy of the data to ensure its reliability for analysis. The module then moves into Advanced Data Preparation, covering techniques like data cleaning, transformation, and encoding for machine learning models. To solidify these concepts, the module includes a Hands-On Activity, giving you the chance to apply data preparation and feature engineering in a practical scenario.

Module 4: Machine Learning (ML) for Business Intelligence

Machine Learning (ML) is a game-changer for Business Intelligence, providing businesses with advanced tools to go beyond basic data reporting. ML algorithms can uncover hidden patterns, forecast future trends, and automate decision-making, which enhances the accuracy and speed of business decisions. Understanding how ML integrates with BI is essential for making smarter, data-driven choices that can improve efficiency, growth, and innovation. By mastering ML in the context of BI, you gain the ability to leverage complex data to drive actionable insights and stay competitive in the ever-evolving data landscape.

This module explores key ML models used in BI, including supervised learning (regression and classification), unsupervised learning (clustering and anomaly detection), and reinforcement learning for optimization. You will dive into real-world applications, such as using regression models for sales forecasting. Additionally, through a hands-on activity, you will gain practical experience by building and evaluating an ML model using popular AI tools like Scikit-learn. This hands-on approach ensures you can apply ML techniques to business data effectively and confidently.

Module 5: Advanced AI and Generative AI for BI

Advanced AI and Generative AI are significantly reshaping Business Intelligence by enabling organizations to go beyond traditional analytics and gain deeper, more actionable insights. These technologies allow businesses to uncover complex patterns, automate processes, and generate new content, all of which enhance decision-making precision and operational efficiency. Understanding how to leverage advanced AI and generative capabilities will empower you to drive innovation, personalize customer experiences, and stay ahead of competitors in today's data-driven landscape.

This module explores the role of Advanced AI and Generative AI in Business Intelligence, focusing on deep learning, neural networks, and cutting-edge AI techniques for improved decision-making. You will learn about Deep Learning and Neural Networks for BI, including Artificial Neural Networks (ANNs), Convolutional Neural Networks (CNNs), and Recurrent Neural Networks (RNNs), with real-world applications like customer segmentation. The module also introduces Generative AI models such as GANs and VAEs, covering their use in data augmentation, automated reporting, and business strategy simulations. Additionally, you will explore advanced techniques like transformer models (BERT and GPT) for natural language processing (NLP)-driven BI applications. A hands-on activity will allow you to apply these concepts by developing a deep learning model for predictive analytics, integrating it into BI workflows.

Module 6 : Statistical Analysis with AI Tools

Statistical analysis is essential for data-driven decision-making, and when combined with AI, it takes this process to the next level. AI-powered statistical analysis enables businesses to gain faster, more accurate, and scalable insights that would otherwise be challenging with traditional methods. By automating complex calculations and integrating machine learning and predictive analytics, AI transforms how data is interpreted, providing a more powerful approach to uncover trends and relationships. Understanding how to utilize AI in statistical analysis allows you to leverage data for strategic planning, forecasting, and problem-solving, making it an essential skill for navigating today's data-centric world.

This module covers statistical analysis for Business Intelligence (BI), focusing on enhancing efficiency and accuracy in data-driven strategies. You will explore Time Series Analysis to identify trends and patterns, crucial for better forecasting and decision-making. The module also demonstrates how AI combines statistical rigor with automation to provide smarter insights, driving competitive advantage in business strategies. By integrating AI tools with traditional statistical methods, this module equips you to turn complex data into actionable insights that support more informed and effective decision-making.

Module 7: AI-Powered Business Intelligence Tools

AI-powered BI tools are revolutionizing how organizations use data to drive decisions and gain a competitive advantage. By incorporating AI into BI platforms, businesses can extract deeper insights, automate the analysis process, and predict trends more accurately. Understanding how AI enhances traditional BI tools is essential for mastering the use of data-driven strategies and making smarter, more informed decisions in real-time. Whether you're new to BI or an experienced professional, this knowledge will help you unlock the full potential of these transformative technologies.

This module explores how AI enhances traditional BI tools, focusing on the integration of AI into platforms like Power BI and Tableau. You will learn how to use these tools to unlock smarter decision-making and gain actionable insights. The module also provides a comprehensive understanding of AI features that enable advanced analytics, offering hands-on experience through practical activities. You will develop the skills to analyze complex datasets, create interactive visualizations, and use AI-powered BI tools to drive impactful business outcomes.

Module 8: Prompt Engineering for AI-Driven BI

Prompt engineering is essential for unlocking the full potential of AI in Business Intelligence (BI). By crafting precise and context-aware prompts, you can guide AI models to generate actionable insights with minimal effort. This skill is becoming increasingly important as AI is integrated into BI workflows for data analysis, reporting, and decision-making. Mastering prompt engineering will help you optimize AI responses, enabling you to bridge the gap between complex data and meaningful business strategies, ultimately enhancing your ability to extract value from AI tools in BI.

This module introduces the foundational concepts of prompt engineering and its crucial role in AI-driven BI. You will learn how to design clear, specific, and contextually relevant prompts to guide AI models effectively. The module also explores techniques for crafting impactful prompts to optimize AI's performance in BI tasks, such as generating reports, identifying trends, and answering key business questions. A hands-on activity will provide you with practical experience in creating prompts, allowing you to apply these skills to real-world BI scenarios.

Module 9: Communication Skills

In AI-driven Business Intelligence, communication skills are crucial for ensuring that AI models and insights are understood and effectively applied. Strong communication enables you to frame AI queries and results in ways that align with business goals and resonate with both technical and non-technical stakeholders. By mastering how to present AI-driven insights clearly and compellingly, you ensure that the value of AI is fully realized across all levels of an organization. Communication bridges the gap between complex data and actionable outcomes,

This module focuses on the key elements of effective communication in the context of AI-driven BI. You will explore Data Storytelling & Communication, learning how to transform raw data into engaging narratives that drive business decisions. The module emphasizes techniques for framing AI insights to ensure clarity and relevance for diverse audiences. You will also learn how to structure data stories with context, relevance, and actionable insights while using AI tools to enhance storytelling. Additionally, the module covers Solution Presentation strategies for presenting AI-generated solutions to stakeholders and utilizing visualization tools to reinforce key messages and overcome challenges in interpreting AI outputs.

Module 10: Capstone Project

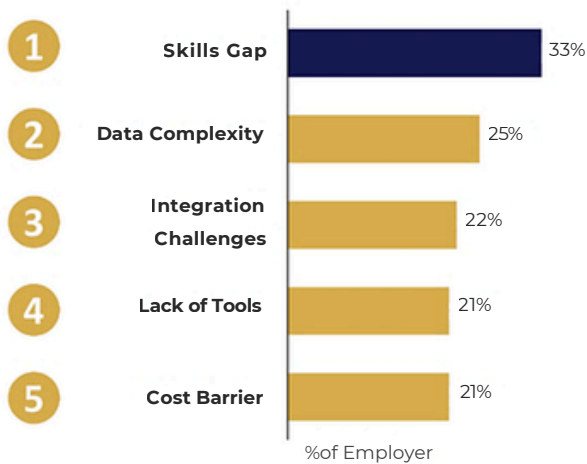
The Capstone Project offers you the opportunity to apply the knowledge and skills you've acquired throughout the certification to a real-world or simulated scenario. It challenges you to integrate and synthesize everything you've learned, pushing you to tackle practical problems and demonstrate mastery in a comprehensive, independent project. Understanding the purpose and value of the capstone will help you focus on showcasing your expertise, creativity, and problem-solving abilities while preparing you for professional challenges in the industry.

This module outlines the objectives of the Capstone Project, emphasizing the importance of demonstrating mastery of AI and BI concepts in practical applications. The project serves as a test of your ability to apply theoretical knowledge, develop innovative solutions, and solve complex problems. It also enhances professional development by offering experience in project management, research, and presentation skills. As part of the project, you'll work on real-world challenges, building a portfolio piece that showcases your capabilities to future employers or clients, while preparing for a successful transition into the professional world.

How Can AI CERTs Help Build an AI-Ready Culture?

While AI technologies offer significant advantages, businesses often face challenges like skill gaps, data complexity, and integration difficulties during implementation. At AI CERTs, we provide certifications to empower organizations to tackle these issues effectively and achieve seamless AI integration.

Why do companies struggle to adopt AI technologies? (2023)



Share of employers saying lacking AI skills is a barrier to adopt AI (2023)

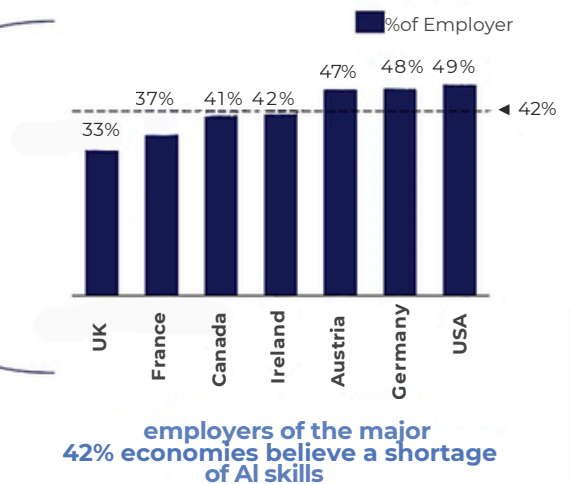


Figure 5: Factors determining the lack of adopting AI Technologies
Source: OCED and IBM

Bridging the AI Skill Gap

- Challenge:** The integration of AI and Business Intelligence (BI) often faces challenges due to the lack of understanding among business leaders and professionals in effectively combining AI with BI tools. Many executives and decision-makers lack the expertise in leveraging AI for BI, leading to missed opportunities in data analysis, predictive analytics, and strategic decision-making.
- Solution:** The certification addresses this gap by providing specialized training designed for professionals and business leaders looking to integrate AI into their BI practices. This certification empowers individuals to harness AI-driven BI tools for smarter decision-making, enabling them to lead AI and BI integration with confidence.
- Benefit:** You will acquire the skills necessary to effectively combine AI with BI systems. This enables leaders to drive data-driven strategies, optimize business intelligence processes, and make informed, impactful decisions that elevate organizational performance and competitiveness in the market.

Empowering Business Intelligence Professionals with AI Skills

- **Challenge:** Many Business Intelligence (BI) professionals lack access to the latest AI-driven tools and strategies, which are essential for staying competitive in a rapidly evolving tech landscape. Without these resources, professionals struggle to leverage the full potential of AI in BI, leading to missed opportunities for data optimization, predictive analytics, and actionable insights.
- **Solution:** The AI+ BI certification provides specialized training designed for BI professionals, offering hands-on experience with cutting-edge AI tools and BI platforms. This certification equips you with the knowledge and practical skills to integrate AI into BI processes, enhancing your ability to make data-driven decisions and drive business intelligence initiatives effectively.
- **Benefit:** With the latest AI tools and strategies at your disposal, you can optimize data analysis, improve decision-making, and unlock deeper business insights. This empowers you to lead data-driven transformations, enhance organizational efficiency, and stay ahead in the competitive business intelligence landscape, positioning your organization for long-term success.

At AI CERTs, we offer a strategic solution, fostering a culture primed for AI integration and innovation. Our AI certification offers comprehensive training and industry-recognized credentials, empowering you to lead your company into an AI-driven future.

AI CERTs Cultivate AI Culture in Several Ways:

- Our meticulously designed certification equips you with a thorough understanding of AI fundamentals and practical applications, ensuring AI becomes an integral and accessible tool within your organization.
- With a strong focus on lifelong learning, the certification empowers your workforce to stay ahead of emerging AI trends and advancements, enabling your organization to maintain a decisive edge in an ever-competitive landscape.
- The AI CERTs certification not only enhances technical expertise but also fosters interdepartmental collaboration by promoting knowledge sharing and teamwork through cross-functional projects, breaking down silos and paving the way for successful AI integration across all levels of your organization.

AI CERTs: Your Pathway to Becoming AI-Ready

The future of business belongs to those who harness the power of AI.

Tailored for Success: Our certifications are customized to meet individual needs, providing specialized training crafted by industry experts to equip your workforce with the specific skills and knowledge required for critical AI roles.

Actionable Expertise: We prioritize hands-on learning through projects and case studies, ensuring your team graduates with the skills and confidence to successfully integrate and utilize AI technology, driving innovation and business benefits. 4

Become an AI Leader: Lead the AI revolution with AI CERTs. Invest in your workforce and join us in fostering an AI-inclusive culture where your team can harness AI's transformative power and lead your organization to success.



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