Artificial Intelligence (AI) and algorithms have become a fixture in our lives. Many organizations need to implement AI in order to stay competitive. In the brand-new AI book *"Data Science for Decision-Makers and Data Professionals"*, the author takes you through this field in ten chapters, covering the hallmarks of intelligent, data-driven organizations and the importance of AI Covered topics range from formulating an AI-first strategy to Big Data architecture, the many types of algorithms, privacy legislation, and ethics. A bright future for AI The author of this book envisions a bright future where artificial intelligence (AI) and business intelligence. (BI) can contribute to solving complex issues in business and society. He introduces the AI-first principle and describes how the latest developments in the field of data science and machine learning can benefit you, but not without casting a critical eye on them. This book also addresses the dark sides, pitfalls, and failure factors of this novel technology AI enables data-driven working Empower.

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Cover image: www.ingimage.com

Publisher:
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120 High Road, East Finchley, London, N2 9ED, United Kingdom
Str. Armeneasca 28/1, office 1, Chisinau MD-2012, Republic of Moldova, Europe
Printed at: see last page
ISBN: 978-620-7-47774-6

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AI enables data-driven working

Empowered by AI and many kinds of algorithms, organizations can now make essential improvement efforts and effectively innovate to stay ahead of the competition. The most essential algorithms and machine learning models are covered in this unique AI handbook, bringing data-driven working to life. From simple functions and business rules to regression models, random forests, cluster analyses, and Bayesian networks, including so-called genetic algorithms.

Artificial Intelligence book contributes to a better world

Entirely up-to-date and presented in beautiful hardcover, this edition of the AI book contains many practical examples. The author covers positive and inspiring AI stories that illustrate how AI can benefit people and society when it comes to health, safety, sustainability, and economics. Continuous improvement and innovation using data are two important themes that run through this essential book for ambitious (business) managers, project managers, executives, and their employees.

TABLE OF CONTENT

BOOK CHAPTER SERIES 2024

Introduction of Artificial Intelligence - Challenges and Applications

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Abstract: The emergence and rise of artificial intelligence undoubtedly played an important role during the development of the Internet. Over the past decade, with extensive applications in the society, artificial intelligence has become more relevant to people's daily life. This chapter introduces the concept of artificial intelligence, the related technologies, and the existing controversies over the topic.

1. Introduction:

The Travel and Hospitality industry has been significantly impacted by the Covid-19 pandemic, with concerns about contact, volatile conditions, and the need for accurate information deterring travellers. This study proposes the use of AI technologies to not only enhance customer service and productivity but also to establish a dynamic Travel Risk Perception Index, fostering trust with travellers. The research comprises two key components: an empirical investigation into AI-driven bots for streamlined bookings, and the development of a hyperlocal Travel Risk Perception Index. This combination aims to offer a high level of personalization for increased value and effectiveness, particularly in the corporate travel market, an area that has been underexplored by researchers.

ather widely accepted definition of AI, also a relatively early one, was proposed by John McCarthy at the 1956 Dartmouth Conference, which outlined that artificial intelligence is about letting a machine simulate the intelligent behavior of humans as precisely as it can be. However, this definition seemingly ignores the possibility of strong artificial intelligence (which means the machine that has the ability or intelligence to solve problems by reasoning).Before explaining what "artificial intelligence" is, we had better clarify the concept of "intelligence" first.According to the theory of multiple intelligences, human intelligence can be categorized into seven types: Linguistic, Logical-Mathematical, Spatial Bodily-Kinesthetic, Musical, Interpersonal and Intrapersonal intelligence.

1.1. Linguistic Intelligence

Linguistic intelligence refers to the ability to effectively express one's thoughts in spoken or written language, understand others' words or texts, flexibly master the phonology, semantics, and grammar of a language, manage verbal thinking, and convey or decode the connotation of linguistic expressions through the verbal thinking. For the people with

strong linguistic intelligence, the ideal career choices could be politician-activist, host, attorney, public speaker, editor, writer, journalist, teacher, etc.

1.2. Logical-Mathematical Intelligence

Logical-mathematical intelligence designates the capability to calculate, quantify, reason, summarize and classify effectively, and to carry out complicated mathematical operations. This capability is characterized by the sensitivity to abstract concepts, such as logical patterns and relationships, statements and claims, and functions. People who are strong in logic-mathematical intelligence are more suitable to work as scientists, accountants, statisticians, engineers, computer software developers, etc.

1.3. Spatial Intelligence

Spatial intelligence features the potential to accurately recognize the visual space and things around it, and to represent what they perceived visually in paintings and graphs. People with strong spatial intelligence are very sensitive to spatial relationships such as color, line, shape, and form. The jobs suitable for them are interior designer, architect, photographer, painter, pilot and so on.

1.4. Bodily-Kinesthetic Intelligence

Bodily-kinesthetic intelligence indicates the capacity to use one's whole body to express thoughts and emotions, and to use hands and other tools to fashion products or manipulate objects. This intelligence demonstrates a variety of particular physical skills such as balance, coordination, agility, strength, suppleness and speed, and tactile abilities. Potential careers for people with strong body-kinesthetic intelligence include athlete, actor, dancer, surgeon, jeweler, mechanic and so on.

1.5. Musical Intelligence

Musical intelligence is the ability to discern pitch, tone, melody, rhythm, and timbre. People having relatively high musical intelligence are particularly sensitive to pitch, tone, melody, rhythm or timbre, and are more competitive in performing, creating and reflecting on music. Their recommended professions include singer, composer, conductor, music critic, the piano tuner and so on.

1.6. Interpersonal Intelligence

Interpersonal intelligence is the capability to understand and interact effectively with others. People with strong interpersonal intelligence can better recognize the moods and temperaments of others, empathize with their feelings and emotions, notice the hidden

information of different interpersonal relationships, and respond appropriately. The professions suitable for them include politician, diplomat, leader, psychologist, PR officer, salesmen, and so on.

1.7. Intrapersonal Intelligence

Intrapersonal intelligence is about self-recognition, which means the capability to understand oneself and then act accordingly based on such knowledge. People with strong intrapersonal intelligence are able to discern their strengths and weaknesses, recognize their inner hobbies, moods, intentions, temperaments and self-esteem, and they like to think independently. Their suitable professions include philosopher, politician, thinker, psychologist and so on.

1.8. Naturalist Intelligence

Naturalist intelligence refers to the ability to observe the various forms of nature, identify and classify the objects, and discriminate the natural and artificial systems.

However, AI is a new type of technological science that investigates and develops the theories, methods, technologies and application systems to simulate, improve and upgrade the human intelligence. The AI is created to enable machines to reason like human being and to endow them with intelligence. Today, the connotation of AI has been greatly broadened, making it an interdisciplinary subject

2. Methodology:

The study draws on research in Tourism, Hospitality, and Robotics, exploring the adoption of robots and AI in these industries. Media Naturalness Theory highlights the importance of natural communication mediums, while Media Equation Theory suggests that computers can be viewed as social actors. The shift towards human-machine interaction in Service Systems of the Future is also examined. Personalization, rooted in AI, Machine Learning, HCI, and User Modelling, is investigated, along with the principles of Human-Centred AI, emphasizing the need for AI systems to understand humans. Additionally, the study incorporates Risk Perception Theory, aligned with the Protection Motivation Theory. For the first study, a partnership with a corporate travel management platform utilizing advanced AI, ML, NLP, and Behavioural Economics is established. The analysis involves over 10,000 users across various companies and roles, focusing on the value provided to employees. A combination of A/B testing, cohort analysis, and multivariate analysis is employed to assess impact on customer experience, engagement, accuracy, response time, and visibility.

The second study proposes a dynamic hyperlocal Travel Risk Perception Index, drawing insights from the Cybersecurity industry. This index combines data from multiple sources, including government, media, and social media, and integrates user behaviour analysis and risk engine to create an end-to-end travel risk visibility matrix and threat perception index, offering timely and trustworthy information for decision-makers.

5. Conclusion:

The Human-Centred AI-driven Services Automation framework and Travel Threat Perception Index highlight the pivotal role of AI, personalization, automation, and natural human-machine interaction in revolutionizing the service industry. Practically, the framework underscores the value of offloading cognitive decision-making from users for routine tasks, enhancing engagement and satisfaction. For researchers, this study provides insights into the symbiotic relationship between humans and machines in an AI-driven environment.

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