

Data Analytics and Management for the Digital Economy:

Innovations, Applications and
Strategic Perspectives



Data
Integration



Advanced
Analytics



Business
Intelligence



Strategic
Decision Making



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Data Analytics and Management for the Digital Economy: Innovations, Applications and Strategic Perspectives



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Data Analytics and Management for the Digital Economy: Innovations, Applications and Strategic Perspectives

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Preface

The rapid advancement of digital technologies has transformed data into one of the most valuable strategic assets for organizations worldwide. In today's digital economy, data analytics has emerged as a critical enabler of informed decision-making, operational excellence, innovation, and sustainable competitive advantage. From artificial intelligence and machine learning to cloud computing and predictive analytics, organizations are increasingly leveraging data-driven insights to navigate complex business environments and respond proactively to changing market dynamics.

The edited volume, **"Data Analytics and Management for the Digital Economy: Innovations, Applications, and Strategic Perspectives,"** brings together high-quality scholarly contributions that examine the evolving role of data analytics across diverse domains of business, management, governance, healthcare, finance, marketing, and technology. The chapters in this volume present contemporary theoretical frameworks, empirical investigations, analytical models, case studies, and practical applications that demonstrate how organizations can harness data for strategic growth and digital transformation.

The book covers a wide spectrum of emerging topics, including big data analytics, business intelligence, predictive and prescriptive analytics, AI and machine learning applications, cloud-based analytics, financial and healthcare analytics, supply chain optimization, e-governance, retail analytics, data governance, privacy, ethics, and Industry 4.0. Collectively, these contributions provide valuable insights into the opportunities and challenges associated with managing data in an increasingly interconnected digital ecosystem.

This volume is intended to serve as a comprehensive resource for researchers, academicians, industry practitioners, policymakers, postgraduate students, and professionals seeking to understand the transformative potential of data analytics in the digital age. We hope that the ideas, research findings, and practical perspectives presented in this book will inspire further innovation and contribute

meaningfully to the advancement of knowledge in data analytics and digital management.

We extend our sincere gratitude to all contributing authors, reviewers, editorial team members, and **Nex Gen Publications** for their unwavering support and dedication in bringing this scholarly work to fruition.

Editors

Dr. Pooja Gupta

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Acknowledgement

The editors express their heartfelt gratitude to everyone whose support and contributions made this edited volume possible.

We sincerely thank all the authors who contributed their original research and shared their expertise in the fields of data analytics, digital technologies, and management. Their scholarly contributions have significantly enhanced the academic quality and multidisciplinary nature of this publication.

We are deeply grateful to the reviewers for their valuable suggestions, constructive feedback, and meticulous evaluation of the submitted chapters. Their efforts have ensured the scholarly rigor and quality of this volume.

We extend our sincere appreciation to **Nex Gen Publications** for their continuous guidance, editorial support, and commitment to publishing high-quality academic research that promotes innovation and knowledge dissemination.

We also acknowledge the encouragement and support received from our respective institutions, colleagues, mentors, friends, and family members throughout the editorial process. Their constant motivation and cooperation have been instrumental in the successful completion of this project.

Finally, we express our gratitude to the readers and researchers who will use this book as a reference for further study and innovation. We hope this volume contributes to meaningful academic discourse and supports evidence-based decision-making in the era of the digital economy.

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About the Editors



Dr. Pooja Gupta is an Associate Professor at the Panipat Institute of Engineering and Technology, Samalkha, Haryana. She is a seasoned management professional with over 16 years of academic experience, specializing in Finance, Banking, and Accounting.

She earned her Ph.D. from Guru Jambheshwar University, Hisar, with a research focus on Foreign Investors and the Stock Market. Dr. Gupta has made significant contributions to academic research, with numerous publications in reputed national and international journals, and has actively participated in various conferences and seminars.

In addition to her research work, she has served as an editor for more than five academic books and has authored four books in her area of expertise. Her academic and research pursuits reflect a strong commitment to advancing knowledge in the field of finance and management.



Prof. (Dr.) Anju Bhandari Gandhi is a distinguished academic and research leader with 19 years of extensive experience in Computer Science and Engineering. She is currently serving as the Professor Incharge of Research & Development at the Panipat Institute of Engineering and Technology, Panipat, where she provides strategic direction for the institution's research endeavors.

Holding a B.Tech, M.Tech, and Ph.D. in CSE, Dr. Gandhi has a formidable publication record, with 65 research papers in reputed, Scopus-indexed international journals. Her research expertise is centered on cutting-edge domains including Artificial Intelligence, Machine Learning, and Data Science.

A dynamic organizer, she has convened numerous high-profile technical events, including international conferences, seminars, Faculty Development Programs (FDPs), workshops, and training sessions. Her contributions to research and innovation have been recognized through multiple awards and grants, most notably her pivotal role in securing and establishing an AICTE Idea Lab.

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Dr. Stuti Mehla is an Associate Professor in the Computer Science and Engineering department at PIET. With a robust academic foundation, she earned her B.Tech. and M.Tech. from Kurukshetra University and her Ph.D. in CSE from Maharishi Markandeshwar University, Mullana in 2022. Boasting over a decade of experience, Dr. Mehla has established a strong research profile, having published more than 20 articles in esteemed international journals and presented her work at numerous conferences.

Her research expertise lies in the cutting-edge domains of Artificial Intelligence, Machine Learning, Data Science, and Recommendation Systems. She is an active contributor to the global professional community, holding memberships in both the IEEE and the ACM. Her research can be explored further via her ORCID: 0000-0003-0220-8860.

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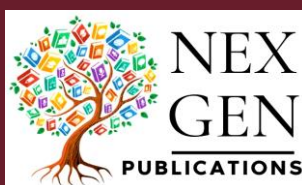
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ABOUT THE BOOK

Data Analytics and Management for the Digital Economy: Innovations, Applications, and Strategic Perspectives explores the transformative role of data analytics in shaping modern organizations, industries, and societies. As businesses increasingly rely on digital technologies, the ability to collect, manage, analyze, and interpret data has become essential for achieving operational excellence, innovation, and strategic competitiveness. This edited volume presents contemporary research on the theories, methodologies, and practical applications of data analytics across multiple domains. The chapters examine key areas such as big data analytics, artificial intelligence, machine learning, business intelligence, predictive and prescriptive analytics, cloud computing, digital transformation, financial analytics, healthcare analytics, marketing analytics, supply chain management, e-governance, retail analytics, and data governance.

The book also addresses emerging challenges related to data privacy, ethics, cybersecurity, regulatory compliance, and responsible data management. Through interdisciplinary perspectives, empirical research, and real-world case studies, it highlights how organizations can effectively leverage data-driven strategies to improve decision-making, foster innovation, enhance customer experiences, and achieve sustainable growth. Designed for researchers, academicians, students, business leaders, data professionals, policymakers, and technology practitioners, this volume serves as a comprehensive reference for understanding the strategic importance of data analytics in the digital economy. It provides valuable insights into emerging trends, innovative practices, and future directions that will shape data-driven organizations in the years ahead. By integrating academic rigor with practical relevance, this book contributes to the growing body of knowledge on data analytics and digital management and serves as an important resource for advancing research, policy, and organizational excellence in the digital era.



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