# AUGMENTING RETAIL REALITY

PART B BLOCKCHAIN, AR, VR, AND AI



EDITED BY

BALRAJ VERMA, AMIT MITTAL, MURALI RAMAN, AND BIRUD SINDHAV

# **Augmenting Retail Reality, Part B**



# Augmenting Retail Reality, Part B

## Blockchain, AR, VR, and Al

#### EDITED BY

#### **BALRAJ VERMA**

Chitkara Business School, Chitkara University, Punjab, India

#### AMIT MITTAL

Chitkara Business School, Chitkara University, Punjab, India

#### **MURALI RAMAN**

Asia Pacific University of Technology & Innovation, Malaysia

**AND** 

### **BIRUD SINDHAV**

University of Nebraska Omaha, USA



Emerald Publishing Limited Emerald Publishing, Floor 5, Northspring, 21-23 Wellington Street, Leeds LS1 4DL.

First edition 2025

Editorial matter and selection © 2025 Balraj Verma, Amit Mittal, Murali Raman, and Birud Sindhav.

Individual chapters © 2025 The authors.

Published under exclusive licence by Emerald Publishing Limited.

#### Reprints and permissions service

Contact: www.copyright.com

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

#### **British Library Cataloguing in Publication Data**

A catalogue record for this book is available from the British Library

ISBN: 978-1-83608-709-0 (Print) ISBN: 978-1-83608-708-3 (Online) ISBN: 978-1-83608-710-6 (Epub)



### **Contents**

About the Editors	vii
About the Contributors	ix
Preface	xvii
Chapter 1 Revolutionizing Customer Experience: Integrating Blockchain with AR and VR in Retail Kaushikkumar Patel	1
Chapter 2 Revolutionizing Customers Shopping Experience via Augmented-Virtual Reality in Retail Business: Whirling Dreams Toward Transforming Retail Industry Reality Bhupinder Singh, Christian Kaunert, Komal Vig and	
Ritu Gautam	23
Chapter 3 Revolutionizing Marketing Management: Navigating the Era of New Age Technologies Namrata Prakash, Monu Bhardwaj and Priya Jindal	39
	39
Chapter 4 Revolutionizing Retail: Exploring the Synergy of Cashless, Contactless, and Autonomous Shopping in the Digital Age	
Mandeep Kaur, Lavisha Luthra, Rajit Verma, Kamaljeet Kaur, Priyanka Salgotra and Nasser Khalufi	55
Chapter 5 Securing the Metaverse: Exploring the Role of Artificial Intelligence in Mitigating Emerging Threats in Manufacturing and Service Industries	
Arjun J. Nair, Sridhar Manohar and Rishi Chaudhry	67

Chapter 6 Unveiling the Power of Omni-channel Retail Strategies	
Vinoth S. and Nidhi Srivastava	85
Chapter 7 Analyzing the Effectiveness of AI-Powered Chatbot's: A Smart PLS Approach for Evaluating User Engagement and	
Satisfaction	
N. Suma Reddy, Varun Nayyar and Pooja Khanna	113
Chapter 8 Artificial Neural Networks (ANN) for Stock	
Price Prediction: A Financial Machine Learning Analysis	
Sulaiman Abdullah Saif Alnasser Mohammed	131
Chapter 9 Augmented Retail Reality: Transforming User	
Experience, Interactivity, and Attitudes in the Shopping Landscape	
Lingam Naveen, Rabi N. Subudhi, Dhananjay Beura and	
Shilpi Sarna	145
Chapter 10 Cryptocurrencies and Blockchain Technology Augmentation Identification in Decentralized Finance	
=	167
Syed Mohd Khalid and Babli Dhiman	10/

#### **About the Editors**

Balraj Verma is currently serving as an Associate Professor at the Doctoral Research Centre of Chitkara Business School, affiliated with Chitkara University, Rajpura, Punjab. He completed his PhD from Jaypee University of Information Technology (JUIT), Waknaghat, and holds a Master's Degree in Business Administration, bringing with him over 16 years of combined academic and corporate experience. His teaching portfolio includes courses such as Marketing Management, Strategic Management, Business Statistics, and Research Methodology. He has successfully supervised three scholars to PhD completion under his guidance, showcasing his proficiency in academic mentorship. His research contributions are substantial, with numerous publications in respected journals indexed in SCI, ABDC, and Scopus. Additionally, he has authored and edited books and contributed chapters to leading international publishers. He is actively involved in organising international conferences and serves as a resource person for Faculty Development Programs (FDPs), Management Development Programs (MDPs), and workshops focused on research methodologies. As a peer reviewer for esteemed journals including the Journal of Knowledge Economy (Springer), Economic Change and Restructuring (Springer), Electronic Commerce Research (Springer), International Journal of Information Management Data Insights (Elsevier), and S N Computer Science (Springer), he contributes significantly to maintaining the standards of academic scholarship in his field. His research interests span E-commerce, Retail Management, Technology Adoption, Aggregator Platforms Models, and Human–Computer Interaction.

Ami Mittal is a Pro-Vice-Chancellor and has over two decades of domestic and international experience in academic leadership, teaching, research, consulting, training, and mentorship. At Chitkara University, his current mandate is to manage and coordinate the PhD programmes, research publications, and international/domestic research collaborations. Seventeen scholars have been awarded PhD degrees under his guidance, and he has published over 120 Scopus/SSCI indexed papers with a number of these included in the ABDC/ABS journal list. He was the Recipient of the Career 360 'Outstanding Faculty Researcher Award' 2023, 'Megastar Award' Chitkara Excellence Awards 2023/4, the Chitkara University Excellence award 2023 (Publications in Business School Category), 2021 (February) for highest cited author and publications with highest H-index (Business School category). He is an Active Resource Person for FDPs, MDPs, and Corporate Trainings. He is a Member of the thesis review board of a number

of universities. He presently reviews for reputable journals such as Technological Forecasting and Social Change (Elsevier), Public Health (Elsevier), Benchmarking (Emerald), Technology Analysis and Strategic Management (Taylor and Francis), International Journal of Consumer Studies (Wiley), Journal of Public Affairs (Wiley), Routledge Studies in Global Student Mobility, International Journal of Emerging Markets (Emerald), Sustainability (MDPI), Management Decision (Emerald), IIM KSMR (Sage), etc. He serves on the editorial boards of Frontiers in Psychology (SSCI/Scopus indexed), Open Psychology Journal (Scopus indexed), Proceedings on Engineering Sciences (Scopus indexed) and Research on Enterprise in Modern Economy (Gdańsk Univeristy of Technology, Poland). He is currently guest editing a special issue in International Journal of Information and Management Data Insights (Elsevier). He also serves on the executive committee of Indian Business School Advisory Council (BSAC) of ETS Global, USA. He is presently on the jury of the QS Reimagine Education Awards, Abu Dhabi 2023. He is a Research Fellow at INTI International University, Malaysia; Visiting Professor at Pathumthani University, Thailand; and Adjunct Faculty, IMSAR – MD University, India.

Murali Raman is both a Rhodes Scholar and Fulbright Fellow. His academic credentials include a PhD from SISAT, Claremont, USA; MBA (Imperial College, London); MSc Human Resources (London School of Economics, UK). He was affiliated to Stanford's Technology Venture Program as a Faculty Fellow. He has published more than 120 papers in International Journals, Conferences, and Book Chapters, in management information systems related areas. He is currently the Deputy Vice Chancellor at Asia Pacific University of Technology & Innovation, Kuala Lumpur, Malaysia.

**Birud Sindhav** is a Professor of marketing at the University of Nebraska at Omaha. He has a PhD with a marketing focus from the University of Oklahoma, Norman. His research interests focus on areas of b-to-b relationships, organisational justice, green advertising, social media, grassroots entrepreneurship in emerging economies, and sales function in startups. His work has been published in the Journal of Retailing, Journal of International Marketing, Journal of Marketing Theory and Practice, Journal of Marketing Channels, and other outlets. He is on the editorial review boards of the European Journal of Marketing, Journal of Marketing Theory and Practice, and Journal of Inter-organizational Relationships. He is a Senior Research Fellow at the Institute for Collaboration Science at his university. He teaches or has taught Digital Marketing, Social Media Marketing, Marketing in a High Technology Environment, Principles of Marketing, Marketing Research, and Doing Business in China in the MBA and undergraduate programmes. He has also taught in Finland, Austria, Egypt, and India. He is a Recipient of the UNO Alumni Outstanding Teaching Award among other awards. He has also provided service and consultation within and outside of the university. Prior to his academic career, he was a Marketing Executive with Amul, the largest food organisation in India.

#### **About the Contributors**

Dhananjay Beura is working as a Professor in Marketing with BIITM, Bhubaneswar, having 20 years of experience. He has completed B. Pharma, PGDM, and PhD in Marketing along with PGDM in Digital Marketing from Purdue University, USA. He has developed his interest in core areas of marketing like consumer behaviour, brand management, and digital marketing and published many articles in international journals. He is also engaged in consulting activities related to strategic advisory with some of the Indian companies and advertising agency. There are eight trademark registered brands and two patent into his credit and few more in the pipeline to be registered. He is also engaged in conducting training programme with few corporate and government institutions for sales force effectiveness and managerial effectiveness. He has published many articles in national and international journal.

**Monu Bhardwaj** is pursuing a doctorate in management at Graphic Era Hill University. His research and teaching experience of over 2 years involves studies on various aspects of Management. He has presented some good research publications in national and international journals. He has supervised Undergraduate and postgraduate students in their research work primarily on Finance and Marketing.

Rishi Chaudhry boasts an extensive professional background and academic credentials. He holds a PhD in Management focusing on HSIDC and Industrial Development of Haryana from IMSAR, MDU Rohtak, Haryana. Additionally, he earned an MBA in Finance & Marketing and an LL.B from IMSAR and the Department of Law at MDU Rohtak, Haryana, respectively. With a wealth of experience, he has served as both Associate Professor and Assistant Professor at IMSAR, MDU Rohtak, Haryana. His areas of expertise encompass Corporate Finance, Financial Investment, Behavioural Finance, Micro Finance, Banking, Insurance, and Accounting. His teaching repertoire includes courses in Financial Management, Cost and Management Accounting, Indian Financial System, and Business Statistics. Furthermore, he has supervised the doctoral theses of 10 scholars. In university administration, he has held various significant roles such as Dean of the Faculty of Management Sciences & Commerce and Dean of the Centre for International Academic Affairs and has been a Member of the Court of University, UGBOS & PGBOS, Faculty of Management Sciences & Commerce, among others. He has also served as the Convenor of the Academic and Administrative Audit Committee and Chairman of the Investment Committee at MDU.

Babli Dhiman holds MBA, M.Com, PGDCA, NET Commerce, NET Management and PhD in Finance and presently working as Professor and HOD Finance at Mittal School of Business, Lovely Professional University. Her research area includes strategic finance, financial issues, and behavioural and quantitative finance. She is a Keen Researcher and having more than 110+ research papers in her credit which are published in ABDC, Scopus, and peer-reviewed journals with high H-index and Impact factor, presented in various seminars and conference at national and international level. She has also authored various international books and having various chapters in edited books. She has supervised more than 31+ M.Phil and PhD scholars. She got best patent award for Fraud detection in stock market. She is a Member of editorial and review boards of various reputed UGC, peer-reviewed, ABDC, and Scopus-listed journals.

**Ritu Gautam**, Assistant Professor, School of Law, Sharda University, is having more than 10 years of diverse experience in the field of Law. She has earned her PhD in Cyber Laws along with LL.M, MBA, B.Com, LLB, and PGCCL. She is an expert in family mediation and heading a very successful Family Dispute Resolution, in Greater Noida, UP. She is having experience in dealing with more than 600 family dispute cases. She has published 5 books on different social issues, 30 research papers in UGC care and SCOPUS journals, and 40 book chapters on different issues.

**Priya Jindal** is currently working as an Associate Professor at Chitkara Business School, Chitkara University, Punjab, India, and holds a Master Degree in Commerce and Economics. She earned her Doctorate in Management. She has contributed more than 16 years in teaching. She supervised four PhD research scholars and two M.Phil candidates. There are numerous research papers to her credit in leading journals among them seven research papers have been published in *Scopus Indexed Journal*. Her areas of research included banking, finance, and insurance. She has filed more than 21 patents and 1 copyright. She is the Editor of two books under IGI publications, and the book was indexed in Scopus.

Christian Kaunert is Professor of International Security at Dublin City University, Ireland. He is also Professor of Policing and Security, as well as Director of the International Centre for Policing and Security at the University of South Wales. In addition, he is Jean Monnet Chair, Director of the Jean Monnet Centre of Excellence, and Director of the Jean Monnet Network on EU Counter-Terrorism (www.eucter.net). Previously, he served as Academic Director and Professor at the Institute for European Studies, Vrije Universiteit Brussel, a Professor of International Politics, Head of Discipline in Politics, and the Director of the European Institute for Security and Justice, a Jean Monnet Centre for Excellence, at the University of Dundee.

Kamaljeet Kaur is serving as an Assistant Professor at Maharishi Markandeshwar Institute of Management, Mullana, Ambala. She possesses a background with degrees in B.Com, M.Com, and MBA with a specialisation in Human Resource Management and Marketing. She completed her doctorate and research publications with an impressive track record in Human Resources. She has published her research findings in Scopus Index Journals as well as in UGC care journals. Her academy reflects her commitment to advising HR and Marketing practices and contributing valuable insights to the scholarly community and the students.

Mandeep Kaur is currently serving in M. M. Institute of Management, Maharishi Markandeshwar (Deemed to be University). She has 10 years of working experience as an Academician. She has published 10 research papers in various Scopus Indexed Journals and also published 2 books and 1 patent. She is Editor-in-Chief of the *International Journal of Multidisciplinary Research and Technology* ISSN 2582-7359 peer-reviewed journal with an impact factor of 6.28, RICERCA, *International Journal of Multidisciplinary Research And Innovation* ISSN 2583-083x, peer-reviewed journal with an impact factor of 7.52.

**Syed Mohd Khalid** completed his M.Com at the prestigious University of Kashmir. Currently, he is on an academic journey pursuing a PhD in Finance at Lovely Professional University, Punjab. His passion for finance and commitment to excellence in education setting his unwavering determination to contribute significantly to the field.

Nasser Khalufi is serving as Assistant Professor in the Department of Management and Marketing, College of Business, Jazan University, Jazan, Saudi Arabia. He also worked as a Quality Coordinator as well as a Marketing Counsellor at the Innovation and Entrepreneurship Centre and previous Supervisor of the Training and Alumni Relationship unit. He got his PhD from the School of Management; Universiti Sains Malaysia specialises in Retailing and Technology Marketing. He obtained his Master's Degree in Marketing and Internet and Social Media Marketing from Saint Xavier University, Chicago, USA. He became a lifetime member of Beta Gamma Sigma (BGS). BGS recognises and honours the top 10% of students. He has more than 10 years of teaching including master level classes and industry experience. He can be contacted.

**Pooja Khanna** is Associate Professor in Mittal School of Business at Lovely Professional University. He has 19 years of experience in academia and industry. Her research encompasses marketing, with particular emphasis on consumer behaviour a key aspect of their research. She has also published in peer-reviewed journals and presented my work at numerous national and international conferences. Beyond academia, she is also committed to public engagement and outreach, often participating in community events or sharing their expertise with the broader public through media appearances or writing for popular outlets.

Lavisha Luthra is a driven and dedicated Scholar, who has illuminated her academic journey with remarkable achievements. With the prestigious UGC NET and JRF exams under her belt, she stands as a Beacon of excellence in her field. Currently embarking on her PhD at Maharishi Markandeshwar Deemed to be University, Mullana, Ambala, she navigates the frontiers of knowledge with passion and precision. Lavisha's commitment to unravelling the mysteries of her discipline is matched only by her relentless pursuit of scholarly excellence. With each endeavour, she fortifies her legacy as a Visionary Researcher poised to make profound contributions to academia and beyond.

Sridhar Manohar currently works at the Doctoral Research Center of Chitkara Business School, Chitkara University, Rajpura, Punjab. He completed his Doctorate in the area of Services Marketing from VIT Business School, VIT University, and holds a Bachelor's Degree in Technology and Dual Master's Degrees in Business Administration and Organisational Psychology. The author is also certified with FDP at IIM-A and possesses expertise in service marketing, innovation and entrepreneurship, scale development process, and multivariate analytics. Their interests lie in teaching business analytics, innovation and entrepreneurship, research methodology, and marketing management. The author has published around 20 research papers that include Scopus-listed and ABDC-ranked international journals such as Society and Business Review, Benchmarking: An International Journal, Electronics Market, Corporate Reputation Review, International Journal of Services and Operations Management, and International Journal of Business Excellence. They have also presented papers and ideas in numerous international conferences.

Sulaiman Abdullah Saif Alnasser Mohammed, an esteemed Associate Professor of Finance, has a distinguished academic career. He earned his PhD from the School of Management at the University Sains Malaysia USM and has over 700 citations on Google Scholar, including from prestigious institutions such as the University of Oxford and Newcastle University in the UK, University of Victoria in Canada, La Trobe Business School, and RMIT University Vietnam. His academic acumen is complemented by practical applications, as demonstrated by his completion of the Data Science for Investment Professionals course at the CFA Institute, USA. He has also taken on pivotal roles within various academic and administrative domains, including scientific committees, editorial boards, volunteerism units, and operational planning units at the collegiate level. His strategic insights and dedication to institutional progress have merited acclaim, as evidenced by the esteemed appreciation award the University of Hail bestowed him. Beyond academia, his professional repertoire extends into the realm of data science for investment professionals. His scholarly output, comprising over 20 ISI papers and book chapters, underscores his substantive contributions to finance, a fact duly recognised by Emerald's highly commended publication award. His enduring commitment to excellence and research fervour reverberate throughout his multifaceted engagements, positioning him as a luminary in finance. His scholarly endeavours, which have significantly impacted the academic discourse,

testify to his unwavering dedication and invaluable contributions to his institution and the broader educational community.

Arjun J. Nair works as a Professor with St. Lawrance College, Ontario, Canada, and is also affiliated with Chitkara Business School, Chitkara University, Rajpura, Punjab. He holds professional memberships in several organisations, including the International Management Research and Technology Consortium in New York, the International Association of Innovation Professionals, the American Management Association, the National Human Resources Association, and the Institute of Research Engineers and Doctors (Senior Member of the Universal Association of Arts and Management Professionals). With over 15 years of practical work experience in a variety of industries, such as education, exporting, hotel food and beverage, restaurant management, and management training, he offers expertise in curriculum development, project management training, tutoring, general management, business administration, business development, staff management, and public relations. He is a Strategic Thinker who has made significant contributions to training and facilitation, business development, and the operations and management aspects of various organisations.

Lingam Naveen is currently an Assistant Professor at the Biju Patnaik Institute of Information Technology and Management Studies, India. He is an Ex-corporate Turned Academician in operations and marketing area. He is a Doctorate Scholar from KIIT School of Management, Bhubaneswar, India. His research interests include augmented reality (AR), retail marketing, tourism, and banking and is keenly interested in learning new research methodologies and statistical techniques which he implements in his research work. He has qualified UGC NET and JRF in Management. He has attended many seminars, conferences, and FDPs and orientation programmes organised by different institutes and organisations in India. He has worked on live projects with big brands like HLL Lifecare & Wildcraft. He has published articles in journals of national and international repute.

Varun Nayyar is result-oriented, proactive, and dedicated working professional with 17+ years of end-to-end achievement-driven experience in the field of education, research, and industry. He is currently working as Program Head (Chitkara Centre of Continuing Education). Previously, he has managed multiple responsibilities, such as convenor placements and convenor admissions, in the MBA department while teaching. In addition, he has been invited by numerous colleges and industries for guest lectures on the topics of research, marketing, stress management, motivation, and others. His academic proficiency in research tools like SPSS, AMOS, R, PLS-SEM, VOSVIEWER, BIBLIOSHINY, and NVIVO has fetched 15 research papers and articles in leading international journals like SCI, Scopus, and (ABDC: A, B, and C) categories.

**Kaushikkumar Patel** is a Distinguished Leader in harnessing data-driven strategies within the financial sector, boasting an extensive career that intersects finance and technology. He is pivotal at TransUnion, where he innovates through Big

xiv

Data, enhancing decision-making processes and financial strategies. His profound knowledge extends to Data Analytics, Financial Technology (FinTech), and Digital Transformation, contributing significantly to advancing tech integration in finance. Based in the United States, he is renowned for his strategic oversight in developing solutions that navigate the complex challenges of data privacy and risk assessment, ensuring compliance and governance in dynamic financial landscapes. His insights have fortified business intelligence, utilising machine learning and cloud computing solutions to drive organisational success. As an influential thought leader, he has shared his expertise and vision through various high-impact publications, shedding light on the transformative power of data in finance. His commitment to excellence was internationally recognised when he was honoured with the ET Leadership Excellence Award for his groundbreaking work in data-driven financial strategies. His dedication transcends his immediate professional sphere, having a lasting impact on societal well-being. He actively engages in CSR initiatives, leveraging technology to enhance lives and contribute to sustainable development. His unique blend of technical prowess and strategic acumen establishes him as a visionary in his field, continually pushing the boundaries of what's possible at the intersection of finance and technology.

Namrata Prakash has been associated with teaching as a profession for the last 19 years, and currently, she is serving Graphic Era Hill University, as an Associate Professor. She graduated from Lady Shriram College, Delhi University and M.Com from BHU Varanasi. She is a gold medallist in M.Com. She is an avid researcher and currently supervising four research scholars. Ph.d degree has been awarded to one scholar. In order to keep herself abreast with the latest trends and brush up her knowledge, she has undergone various refresher courses. She feels learning never stops.

N. Suma Reddy is Assistant Professor in St Ann's college for women Autonomous, Hyderabad, having 29 years of experience in Academia. She has rich research experience and presented papers at both national and international level. She published papers in UGC care, Scopus, and peer-reviewed journals and developed E.content Material for B.Com 5th Semester at EMRC, Hyderabad. She has to credit 40 research papers. In addition to academic contribution, she has participated and contributed towards CSR drives.

Priyanka Salgotra is PhD, M.Phil, M.Com, UGC-NET qualified and is currently working as a Professor in Maharishi Markandeshwar Institute of Management, Maharishi Markandeshwar Deemed to be University, Mullana, Ambala. Her area of specialisation is Accounting and Finance. She has a total teaching experience of 15.5 years. She worked with Maharishi Markandeshwar Trust as a Faculty in the Department of Management from 1.7.2008 to 03.06.2019 and from 24.07.2023 till date. Before joining MMDU, she worked as a Lecturer in ApeeJay College of Fine Arts, Jalandhar, also for the period July 2003 to September 2006.

Shilpi Sarna is working as Professor (HR & Law) at Lloyd Business School, Greater Noida. She has earned her PhD in Labour Laws from Jiwaji University, Gwalior, and having 21 years of experience. She is HR Analytics certified by IIM Rohtak and expert in the areas of organisational behaviour, HRM, performance management, strategic HR and stress management, and labour laws. She has numerous publications in international and Scopus indexed journals.

Bhupinder Singh is working as Professor at Sharda University, India and also as Honorary Professor in the University of South Wales, UK, and the Santo Tomas University, Tunja, Colombia. His areas of publications as smart healthcare, medicines, fuzzy logics, artificial intelligence, robotics, machine learning, deep learning, federated learning, IoT, PV glasses, metaverse, and many more. He has authored 3 books, 139 papers, and presented 163 papers in international/national conferences and seminars; participated in more than 40 workshops/FDP's/QIP's and 25 courses from international universities of repute; organised more than 59 events with international and national academicians and industry people's, editor-in-chief and co-editor in journals; and developed new courses.

Nidhi Srivastava is currently working with MEASI Institute of Management, Chennai, as Assistant Professor and has over 11 years of experience in teaching. She has 1 year of industry experience in HR domain and her research interests includes organisational behaviour, leadership, human resource management, general management, and corporate social responsibility. She is a Certified DiSc Trainer and also PhD Reviewer at renowned universities. She has published various research articles indexed in Scopus, ABDC, UGC Care and some renowned peer-reviewed journals.

Rabi N. Subudhi is a Senior Professor at KIIT School of Management, KIIT University, India. With over 34 years of teaching experience, he has published 12 books and over 70 research papers in the area of quantitative research methodology. He is an Active Member of many reputed international academic societies, like, American Society of Engineering Management (ASEM), International Sociology Association (ISA-RC), ORSI, ICA, and ICAS. He has supervised 10 scholars for their PhD degrees and received a senior research fellowship (SRF) award from CSIR, Government of India, for his doctoral research. He was Chapter President of ORSI Bhubaneswar. He is presently the Editor of KIIT Management Research Journal, Parikalpana. He is also a Reviewer for many international journals. He has published many articles in regional languages and takes interest in Children's literature.

**Rajit Verma** is a confident, extrovert, flexible, and energetic person with good communication skills. He has proven strength in problem-solving and coordination with strong analytical skills. He is a diligent and tenacious worker with a deep sense of ethics and integrity and strong interpersonal skills. He has 15 years of teaching experience in university teaching. He has a PhD in the area of Finance

and Financial econometrics from Kurukshetra University in 2018. He pursued an MBA (Finance) from Kurukshetra University in 2009. His key areas of research are artificial neural networks and machine learning in the security market, portfolio management, investment analysis, blockchains, and cryptography. He has many achievements and has conferred many national and international research awards. He has more than 25 Scopus/SCI publications, and also, and he has 25+ patents to his name.

Komal Vig is working as the Dean of Sharda School of Law, Sharda University, Greater Noida. She is LL.D. in Criminal Law and MBA (HR). She has served in the field of academics in different capacities for more than 20 years. She has published more than 95 research papers in International and National Journals (including 11 Scopus), 20+ book chapters, and 30+ conference paper publications. She supervised six scholars who have successfully completed PhD under her guidance and many others are pursuing. She has presented more than 65 research papers in national and international seminars/conferences. Her area of interest is criminal law, family law, and laws related to women's rights. She is a Member of the inspection committees of various governing and accrediting bodies. She has chaired numerous sessions in international and national conferences/ seminars. She is Active Member of Board of Studies of various universities, received life membership of the Indian law Institute (Deemed University) New Delhi, "Women Empowerment Award-2023" from Council of Research and Sustainable Development, India.

**Vinoth S.** is currently working with MEASI Institute of Management, Chennai, as Assistant Professor and has over 12 years of experience in teaching. He is specialised in marketing and has around three years of industry experience. His research interests include consumer behaviour, green marketing, and organisational behaviour. His area of expertise also includes statistics and operations research. He has published around 15 research papers in various international journals and conferences.

#### **Preface**

In the ever-evolving realm of retail commerce, the confluence of groundbreaking technologies is not merely a trend but a transformative force reshaping the industry's very foundations. *Augmenting Retail Reality, Part B: Blockchain, AR, VR, and AI* delves into this dynamic landscape, offering an insightful exploration of how cutting-edge innovations are revolutionising the retail experience. This book is designed to serve as a comprehensive guide for retailers, researchers, students, and technology enthusiasts, illuminating the path towards a future where technology and retail seamlessly intersect.

As the retail sector undergoes rapid metamorphosis, driven by technological advancements, there is a critical need for a resource that comprehensively dissects the symbiotic relationship between technology and commerce. This book addresses that need by providing an in-depth analysis of technologies such as the Internet of Things (IoT), blockchain, artificial intelligence (AI), robotics, augmented reality (AR), and virtual reality (VR). Each chapter meticulously examines how these innovations are not only enhancing customer experiences but also driving operational efficiencies and unlocking new business opportunities.

The integration of these technologies offers unparalleled potential to transform every facet of the retail journey. From personalised and immersive shopping experiences powered by AR and VR to the secure, transparent transactions enabled by blockchain, this book explores the myriad ways in which technology is redefining the retail landscape. AI and data analytics are highlighted for their roles in delivering precision-targeted personalisation, while IoT and robotics are showcased for their contributions to streamlined operations and improved customer satisfaction.

A key feature of this publication is its holistic approach, catering to a diverse audience. Retailers will find practical insights and best practices to implement these technologies effectively. Researchers and students will benefit from the theoretical perspectives and case studies that enrich their understanding of the current trends and future directions. Technology enthusiasts will appreciate the detailed exploration of innovative solutions and their real-world applications in retail.

This book stands out by providing a contemporaneous and comprehensive vantage point, essential for maintaining a competitive edge in an era of rapid technological shifts. It bridges a critical gap in current literature by offering an integrated resource that scrutinises the multifaceted impacts of technology on retail. Through pragmatic examples, success stories, and industry-approved best

practices, it addresses the unique challenges and opportunities faced by stake-holders in the retail ecosystem.

The innovative essence of this book lies in its ability to deliver both breadth and depth of insights. It not only elucidates the latest technological trends but also addresses the practical challenges associated with integrating these technologies into the retail fabric. By doing so, it empowers readers to make informed decisions and drive transformative change within their organisations.

At this transformative juncture, *Augmenting Retail Reality: Blockchain, AR, VR, and AI* serves as a navigational compass, guiding readers through the complex interplay of technology and retail. Its synthesis of comprehensive analysis, forward-looking insights, and actionable strategies makes it an invaluable resource for all stakeholders invested in the future of retail. This publication is not merely a technical exposition of technological disruptions; it is an essential guide empowering retailers to transcend traditional boundaries and confidently navigate the new era of retail innovation.

By presenting a clear, coherent, and compelling narrative, this book aims to inspire and equip its readers with the knowledge and tools necessary to thrive in the rapidly evolving retail environment.

Welcome to the future of retail, where technology and innovation converge to create unparalleled opportunities for growth and transformation.

Balraj Verma, Chitkara Business School, Chitkara University, Punjab, India Amit Mittal, Chitkara Business School, Chitkara University, Punjab, India Murali Raman, Asia Pacific University of Technology & Innovation, Malaysia Birud Sindhay, University of Nebraska Omaha, USA