

THE INTERSECTION OF AI AND MODERN FINANCE

DR. ALOK KUMAR

# Financial Intelligence: The Intersection of AI and Modern Finance



India | UAE | Nigeria | Uzbekistan | Montenegro | Iraq | Egypt | Thailand | Uganda | Philippines | Indonesia www.parabpublications.com

# Financial Intelligence: The Intersection of AI and Modern Finance

Authored By:

Dr. Alok Kumar

Assistant Professor and Head Department of Commerce Aisect University Hazaribag (Jharkhand ) Copyright 2025 by Dr. Alok Kumar

First Impression: June 2025

Financial Intelligence: The Intersection of AI and

**Modern Finance** 

ISBN: 978-93-48959-26-3

Rs. 499/- (\$80)

No part of the book may be printed, copied, stored, retrieved, duplicated and reproduced in any form without the written permission of the editor/publisher.

#### **DISCLAIMER**

Information contained in this book has been published by Parab Publications and has been obtained by the author from sources believed to be reliable and correct to the best of their knowledge. The author is solely responsible for the contents of the articles compiled in this book. Responsibility of authenticity of the work or the concepts/views presented by the author through this book shall lie with the author and the publisher has no role or claim or any responsibility in this regard. Errors, if any, are purely unintentional and readers are requested to communicate such error to the author to avoid discrepancies in future.

Published by: Parab Publications

# Dedicated to

This book is dedicated to my family and parents who always support me and inspired me in every stage

## Preface

The convergence of artificial intelligence (AI) and modern finance marks one of the most transformative shifts in the global economic landscape. From algorithmic trading and credit scoring to fraud detection and personalized banking, AI is redefining how financial systems operate, make decisions, and serve society.

This book, "Financial Intelligence: The Intersection of AI and Modern Finance," explores this dynamic intersection, offering a comprehensive overview of the technologies, innovations, and ethical challenges shaping the future of finance. It is designed to guide students, researchers, professionals, and policymakers through the core concepts, applications, and implications of AI-driven finance.

Each chapter combines theoretical insights with real-world case studies, highlighting both the opportunities and risks associated with intelligent automation and data-driven financial decision-making. The goal is to foster critical thinking about how we can build more efficient, inclusive, and responsible financial systems through AI.

As we stand at the threshold of a new financial era, understanding this intersection is not just beneficial—it is essential. I hope this book serves as a valuable resource and inspires meaningful dialogue on the future of intelligent finance.

## Acknowledgment

The journey of writing "Financial Intelligence: The Intersection of AI and Modern Finance" has been both intellectually stimulating and personally rewarding. This book would not have been possible without the support, encouragement, and contributions of many individuals and institutions.

First and foremost, I express my heartfelt gratitude to my family, whose unwavering belief in my work and constant encouragement gave me the strength and motivation to see this project through.

I am deeply indebted to the scholars and practitioners whose research and insights have shaped the foundation of this book. Their pioneering work in the fields of artificial intelligence and financial systems provided the academic backbone that guided my exploration.

Special thanks are due to my colleagues, mentors, and friends who offered valuable feedback, constructive criticism, and thoughtful discussions during the development of this manuscript. Their perspectives enriched the content and sharpened the analysis presented in these pages.

I am also grateful to the publishing team for their professionalism, patience, and guidance throughout the editorial process. Their commitment to quality and clarity has been instrumental in bringing this work to life.

Lastly, I dedicate this book to all readers, researchers, and professionals who seek to understand the evolving synergy between AI and finance. May this work serve as a resource and inspiration in their pursuit of knowledge and innovation.

With sincere appreciation,

Dr. Alok Kumar

## Table of Contents

| Chapter 1:   | 1 - 20    |
|--|-----------|
| The Rise of Financial Intelligence                             |           |
| Chapter 2:   | 21 - 39   |
| Fundamentals of Artificial Intelligence in Finance             |           |
| Chapter 3:   | 40 - 61   |
| AI in Financial Markets and Trading                            |           |
| Chapter 4:   | 62 - 81   |
| AI-Powered Risk Assessment and Fraud Detection                 |           |
| Chapter 5:   | 82 - 98   |
| Robo-Advisors and Wealth Management                            |           |
| Chapter 6:   | 99 - 118  |
| AI in Banking and Credit Systems                               |           |
| Chapter 7:   | 119 - 137 |
| Regulatory Technology (RegTech) and Compliance                 |           |
| Chapter 8:   | 138 - 156 |
| FinTech Ecosystems and the Future of Financial Services        |           |
| Chapter 9:   | 157 - 175 |
| AI Ethics, Data Privacy, and Responsible Innovation in Finance |           |
| Chapter 10:  | 176 - 194 |
| The Road Ahead – Challenges and Opportunities                  |           |

### ABOUT THE AUTHOR



Dr. Alok Kumar
Assistant Professor & Head, Department of Commerce
AISECT University, Hazaribag (Jharkhand)

Dr. Alok Kumar is a renowned expert in banking law, with over 14 years of teaching experience and a strong academic background in Commerce. He is currently pursuing a "Post-Doctoral Fellow" and serves as a Research Supervisor, guiding scholars in advanced areas of banking and finance.

Dr. Kumar has published over 30 research articles in national and international journals and has actively participated in numerous seminars and conferences across the globe. He has also attended 20 Faculty Development Programs (FDPs) and 20 workshops, further strengthening his academic and pedagogical skills. He is also member of Editorial board of "Bihar Research Journal".

With a deep understanding of the complexities of banking law, particularly in areas such as Non-Performing Assets (NPA), his contributions have been instrumental in shaping contemporary discourse. Dr. Kumar is also exploring the evolving interface between finance and technology. He has published several high-quality papers in the domain of banking law, finance and technology and continues to contribute significantly to legal and financial scholarship.

Currently serving as the Assistant Professor and Head of the Department of Commerce at AISECT University, Dr. Kumar believes that a strong foundation in banking is crucial for national growth. His upcoming book on banking law is poised to be a milestone resource for students and professionals alike.

His upcoming book on "Financial Intelligence: The Intersection of AI and Modern Finance" will be highly beneficial for Commerce & Management students, CS & IT students, Law students, and also for students preparing for competitive exams.

### ABOUT THE BOOK

**Financial Intelligence: The Intersection of AI and Modern Finance** offers a concise yet powerful look into how artificial intelligence is reshaping the world of finance. Covering key topics like algorithmic trading, fraud detection, personalized banking, and fintech innovation, this book bridges the gap between technology and financial strategy.

Blending real-world insights with emerging trends, it serves as an essential guide for professionals, students, and anyone eager to understand the future of smart, data-driven finance.







India | UAE | Nigeria | Malaysia | Montenegro | Iraq | Egypt | Thailand | Uganda | Philippines | Indonesia | Parab Publications | www.parabpublications.com | info@parabpublications.com