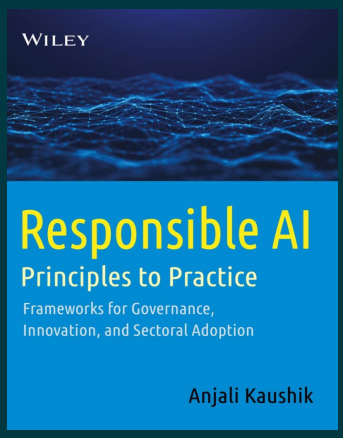
WILEY



Responsible AI: Principles to Practice

By Anjali Kaushik

Paperback 9789373327631 **₹999.00**

Pages: 400

Description

"Responsible AI: Principles to Practice – Frameworks for Governance, Innovation, and Sectoral Adoption" by Anjali Kaushik is a definitive guide for navigating the complex landscape of ethical, legal, and operational challenges in Artificial Intelligence. Drawing on years of research, teaching, and policy consultation, the book bridges the gap between high-level ethical principles and practical implementation. It is organized into four parts:

1. Global Frameworks and Ethical AI: Lays the foundation with international principles, laws, and governance models.
2. Technical and Socio-Ethical Dimensions: Explores bias, explainability, privacy, machine unlearning, and synthetic data.
3. Operationalizing Responsible AI: Provides actionable strategies for embedding Responsible AI into organizational processes, including governance, risk management, and sustainability.
4. Sectoral Frameworks and Use Cases: Demonstrates application across finance, healthcare, public services, media, and education, with real-world case studies and best practices.

The book concludes with practical annexures—self-assessment checklists, coding exercises, and risk repository templates—making it an indispensable resource for anyone seeking to ensure that AI systems are not only innovative and efficient, but also fair, transparent, accountable, and aligned with human values.

Salient Features:

1. Comprehensive Frameworks: The book systematically covers global, technical, ethical, and sectoral frameworks for Responsible AI, including the EU AI Act, NIST AI Risk Management Framework, OECD AI Principles, UNESCO guidelines, and India’s DPDP Act.
2. From Principles to Practice: Moves beyond high-level ethics to offer actionable strategies for operationalizing Responsible AI in organizations, including governance structures, risk registers, and lifecycle management.
3. Technical & Socio-Ethical Dimensions: Deep dives into bias, fairness, explainability (XAI), privacy, data protection, machine unlearning, synthetic data, and copyright/IPR challenges in generative AI.
4. Sectoral Use Cases: Provides real-world frameworks and case studies across finance, healthcare, public services, media, and education, illustrating practical challenges and solutions.
5. AI Governance Architecture: Introduces a layered governance model—external requirements, organizational operationalization, AI system lifecycle, and assurance/monitoring—for embedding Responsible AI into business and public sector operations.
6. Risk Management Tools: Offers detailed checklists, risk registers, and auditing templates (aligned with ISO/IEC 42001, NIST, EU AI Act) for developers and deployers to ensure compliance, fairness, and accountability.
7. Legal and Regulatory Insights: Explains the evolving landscape of AI laws (EU, US, China, India), liability, data localization, and sector-specific compliance.
8. Practical Toolkits: Includes hands-on exercises for explainability (LIME, SHAP, PDP), self-assessment checklists, and

guidance on using OWASP for AI risk management.

9. Focus on Sustainability: Addresses the environmental impact of AI, advocating for Green AI practices and sustainable innovation.
10. Forward-Looking: Discusses emerging topics like agentic AI, digital twins, regulatory sandboxes, and the future of trustworthy AI societies.

About the Author

Anjali Kaushik

Dr. Anjali Kaushik is a Professor at the Management Development Institute (MDI), Gurgaon, which is one of the top business schools in India. She has served as Dean of Strategic Initiatives, where she started the Online PGDM program, led ERP deployment, and significantly expanded global collaborations. She has also held academic positions as IT Head and Area Chair. Dr. Kaushik has contributed as an expert on strategic planning and policy making in e-governance and cybersecurity with the Government of India. She has authored eight books and published more than 35 papers in peer-reviewed international journals.).

Table of Contents

PART I Global Frameworks and Ethical AI

1 Introduction

1.1 Introduction

1.2 What Is Responsible AI?

1.3 Threats with AI Models

1.4 Generative AI Threats and Challenges

1.5 Conclusion

2 The Concepts and Principles of Responsible AI

2.1 Introduction

2.2 Core Shared Principles

2.3 Additional Considerations

2.4 Liability and Compliance Obligations for AI Developers and Deployers

2.5 Conclusion

3 A Discussion on Global Frameworks

3.1 Introduction

3.2 Country-Specific Frameworks

3.3 Industry and Institutional Frameworks

3.4 Academic Frameworks

3.5 Overall Analysis: Roles and Responsibilities of AI Actors

3.6 Conclusion

4 Laws and Regulations for Responsible AI Governance

4.1 Introduction

4.2 The EU Artificial Intelligence Act (AIA): EU AI ACT

4.3 China’s Binding AI Regulations

4.4 The United States: Emerging Patchwork of Binding AI Legislation
4.5 Conclusion
PART II Responsible AI: Technical and Socio-Ethical Dimensions 81
5 Understanding Bias
5.1 Introduction
5.2 Understanding Bias in AI
5.3 Why Bias Is Bad?
5.4 Categories of Bias
5.5 Bias Mitigation Strategies
5.6 Managing Bias
5.7 Conclusion
6 Understanding and Trusting AI Models through Explainable AI
6.1 Introduction
6.2 Conceptual Foundations
6.3 Categories of Explainable AI Techniques
6.4 Applications of Explainable AI
6.5 Challenges to Explainable AI
6.6 Future Scope
6.7 Conclusion
7 Privacy and Data Protection
7.1 Introduction
7.2 Application of Global Data Protection Laws and Frameworks
7.3 Recent Cases Illustrating Data Privacy Breach Risks
7.4 From Legal Frameworks to Technical Enablement: The Role of Privacy-Enhancing Technologies
7.5 Privacy Threat Modeling and Enablement for E-commerce
7.6 Conclusion 137
8 Machine Unlearning
8.1 Introduction
8.2 What Is Machine Unlearning?
8.3 Categories of Machine Unlearning
8.4 Centralized Unlearning
8.5 Federated/Distributed Unlearning
8.6 Unlearning Verification
8.7 Privacy and Security Issues in Machine Unlearning
8.8 Industry Applications and Case Studies
8.9 Implementation Guidelines and Best Practices
8.10 Conclusion
9 Responsible AI and Synthetic Data Generation

9.1 Introduction
9.2 Evolution of Synthetic Data Generation
9.3 Uses of Synthetic Data Generation
9.4 Characteristics of Synthetic Data
9.5 Types of Synthetic Data
9.6 Synthetic Data Generation Techniques
9.7 Synthetic Data Generation Tools
9.8 Synthetic Data Applications
9.9 Challenges and Limitations while Using Synthetic Data
9.10 Conclusion
10 AI and Copyright Management
10.1 Introduction
10.2 Emerging Challenges of Generative AI in Copyright
10.3 Legal Issues in AI-Generated Content and Copyright Law
10.4 Evolving Notions of Liability and Organizational Compliance
10.5 Global Approaches to AI and Copyright
10.6 Technology and Tools for Copyright Protection
10.7 Conclusion
11 AI and Digital Integrity: Deepfakes and Digital Deception
11.1 Introduction
11.2 A Brief History of Deepfakes
11.3 Key Technologies Behind Deepfakes Creation and Detection
11.4 Explanation of Deepfake Creation Techniques
11.5 Explanation of Deepfake Prevention Techniques
11.6 Tools and Technologies for Watermarking and Media Authentication
11.7 Explanation of Deepfake Detection Techniques
11.8 Role of Media Literacy
11.9 Global and Institutional Approaches to Media Literacy
11.10 Best Practices for Building Media Literacy Ecosystems
11.11 Guidelines for Social Media Platforms/Intermediaries
11.12 Conclusion
PART III Operationalizing Responsible AI
12 Responsible AI by Design: Governance, Architecture, and Processes
12.1 Introduction
12.2 A Layered Architecture for Responsible AI Governance
12.3 The Organizational Operationalization Layer
12.4 AI System Layer: Lifecycle and Operational Governance Components
12.5 Assurance, Monitoring, and Accountability Layer

12.6 From Strategy to Accountability: Final Pillars of Responsible AI Governance
12.7 Conclusion
13 AI and Sustainability
13.1 Introduction
13.2 How Responsible AI Practices Contribute to Sustainability
13.3 Ethical and Social Dimensions of Responsible AI
13.4 Responsible AI and Energy Optimization: Why It Matters and How to Achieve It
13.5 Sovereign AI and Localized Sustainability
13.6 Key Stages in AI-Driven Sustainability Transformation
13.7 The Role of Governance in Sustainable AI
13.8 Lifecycle Integration: From Design to Retirement
13.9 Way Forward: A Practice Agenda
13.10 Conclusion
14 Responsible AI and Innovation
14.1 Introduction
14.2 Why Responsible Innovation Matters Today
14.3 The Four Pillars of Responsible Innovation
14.4 Anticipatory Governance and Ethical Foresight
14.5 Ethics and Governance in Innovation
14.6 Broader Ethical Issues in AI Systems
14.7 Decline of AI Ethics Teams and Corporate Responsibility
14.8 Overview of Embedded Ethics
14.9 Regulatory Sandboxes and Guardrails for Responsible AI
14.10 Digital Twins and Simulation for AI Governance
14.11 Institutionalization of Responsible Innovation
14.12 Conclusion
PART IV Sectoral Frameworks and Use Cases
15 Responsible AI and Sectoral Adoption
15.1 Introduction
15.2 Finance
15.3 Healthcare
15.4 Public Services
15.5 Media and Content
15.6 Education and Research
15.7 Conclusion
16 Case-Based Insights on Responsible AI Practices
16.1 Introduction
16.2 Managing Ethical Risks in AI-Driven Hiring Systems

16.3 Twitter’s Algorithmic Political Amplification Controversy

16.4 DBS Bank: Becoming a Technology-Led, AI-Fueled Organization

16.5 Replika and the Ethical Crisis of Emotional AI Companionship

16.6 When Autonomous Vehicles Ask: Who Is Responsible?

17 Conclusion: Building Trustworthy AI Societies

Annexure A: Self-Assessment Checklist for Developers and Deployers

Annexure B: Generative AI Self-Assessment Checklist

Annexure C: Data Localization and Data Sovereignty

Annexure D: LIME, SHAP, PDP Python Exercise

Annexure E: Defining an AI Risk Repository

Annexure F: Using OWASP for Managing AI Risk

Bibliography

Glossary

To purchase this product, please visit:
https://www.wileyindia.com/responsible-ai-principles-to-practice.html

Scan to buy