Contents

Introduction ix
About the Editors xi
List of Contributors xiii

PART I: FOUNDATIONS OF GENERATIVE AI IN DEVELOPMENT

1 Understanding Generative AI in Plain Language 3
RAVITEZ DONDETI

2 The Evolution of Software Development 19
SHRUTHIKA GAJENDRAN AND SUBHAJIT PAHARI

PART II: APPLYING GENERATIVE AI ACROSS THE SOFTWARE LIFECYCLE

3 Ideation and Planning with AI 43
RASEENA V., RASHEEJA A.P., AND SAFEENA C.

4 Designing User Interfaces with AI 69
AMAN GOYAL

5 Writing and Generating Code 89
AJAY KRISHNA BORRA

6 Debugging, Testing, and Refactoring 117
RAVITEZ DONDETI

7 Backend and API Development 153
SARASWATI MISHRA

8 Deployment, DevOps, and Automation 167
SUDHEER AMGOTHU

PART III: BEYOND CODE—PEOPLE, PROCESSES, AND POSSIBILITIES

9 Building AI-Augmented Teams 185
A. PRIYA

10 Governance, Ethics, and Ownership 209
VENKATA HARI KISHAN KOPPURAVURI

11 Case Studies from the Field 237
SANTHOSH KUMAR VEERAMALLA AND SANSKRUTI PATEL

PART IV: WHAT'S NEXT AND HOW TO PREPARE

12 Agentic Workflows and AI Agents 269
DHIVYA NAGASUBRAMANIAN

13 Building a Generative AI Application: A Case Study on an AI Travel Planner 289
JOTHSNA PRAVEENA PENDYALA, SHAILESH KADAM, AND MOHANA UMA SAI MANEM

14 Future-Proofing Your Skills and Stack: Strategies for Software Leaders in the Age of Generative AI 325
A. PRIYA

Conclusion 347

Index 349