Contents

Preface — VII

Acknowledgments — IX

Editors' biography — XV

List of contributing authors — XVII

Ankit Bisht and Vandana Khaitan (Nee Gupta)

Chapter 1

Cloud-enabled HAP for next-generation reliable networks: a dependability analysis —— 1

Jing Wu, Cunhua Qian, Junjun Zheng, and Tadashi Dohi

Chapter 2

Opportunity-based age replacement models in discrete time and their application —— 25

Laxminarayan Sahoo, Avishek Banerjee, and Amit Chakraborty

Chapter 3

An efficient GA-PSO algorithm for addressing multi-objective reliability optimization problems —— 47

Dmitry Shchemelinin and Mario Divan

Chapter 4

Mathematical data models for forecasting computational resources in cloud computing —— 65

Sanjay Sharma, Anand Tyaqi, B. B. Verma, and Sachin Kumar

Chapter 5

Mathematical modeling and reliability analysis of pulsed GTAW process in mechanical property for weld joints —— 87

Mohini Agarwal, Deepanshu Bhatia, Subhrata Das, and Adarsh Anand

Chapter 6

Analyzing enablers influencing reliability and adoption of conversational bots: an interpretive structural modeling technique —— 101

Nupur Goyal, Mangey Ram, Shivani, and Vivek Mishra

Chapter 7

Modeling of series parallel system by two types of repairs for reliability perspective —— 129

Wiam I. Alluhaibi and Omar H. Alhazmi

Chapter 8

Analyzing unmanned aerial vehicle threats and risks using STRIDE and DREAD —— 143

Ganga Negi, Mangey Ram, Anuj Kumar, Sushil Chandra Dimri, and Sangeeta Pant

Chapter 9

Reliability analysis of a two out of four stochastic model with rework strategy —— 183

Santosh Kumar, Elias Munapo, Philimon Nyamugure, and Trust Tawanda

Chapter 10

A fast algorithm to find the maximum reliability route in stochastic networks —— 209

Ompal Singh, Asha Yadav, Adarsh Anand, and Shinji Inoue

Chapter 11

Discovery and fixation process for software vulnerabilities: modeling and analysis incorporating learning functions —— 221

Yoshinobu Tamura, Shoichiro Miyamoto, Lei Zhou, and Shigeru Yamada

Chapter 12

Reliability assessment method based on cyclic noisy fault big data and AI for OSS —— 237

Divya, Navneet Bhatt, Adarsh Anand, and Ljubisa Papic

Chapter 13

MEREC-CoCoSo-based systematic approach to analyze and evaluate critical testing coverage measures for software development process —— 257

Muhammad Ehsan Rana, Omar S. Saleh, and A. V. Senthil Kumar

Chapter 14

The impact of mediator and observer design patterns on software reliability: an empirical evaluation —— 277

Priyanka Gupta, Deepti Aggrawal, Adarsh Anand, and Jagvinder Singh Chapter 15

Identifying the most efficient vulnerability detection methods:
a multi-criteria decision-making approach —— 295

Marina Polyakova, Alexey Korchunov, Elena Shiryaeva, Ekaterina Lopatina, Nikita Trubnikov, Eduard Golubchik, and Dmitrii Konstantinov

Chapter 16

Methodology of developing mathematical models with fuzzy logic elements for quality indices control —— 307

Jyotish N. P. Singh, Ompal Singh, Adarsh Anand, and V. S. S. Yadavalli

Chapter 17

Review of multi-release software reliability growth modeling framework —— 339

Index —— 353