

**Up To 50% OFF on Student Reference books**



[Enlarge](#)

**(1st Edition)**

## Soft Computing Applications and Techniques in Healthcare

By [Ashish Mishra](#), [G. Suseendran](#), [Trung-Nghia Phung](#)

Copyright Year 2021

 Available for pre-order. Item will ship after October 14, 2020

ISBN 9780367423872

October 14, 2020 **Forthcoming** by CRC Press

260 Pages 154 B/W Illustrations

**Format**

Hardback

**Quantity**

1

**GBP £135.00**

 [Add to Wish List](#)

 [Pre-Order](#)

[Purchase Locally](#)

Prices & shipping based on [shipping country](#)

## Book Description

This book provides insights into contemporary issues and challenges in soft computing applications and techniques in healthcare. It will be a useful guide to identify, categorise and assess the role of different soft computing techniques for disease, diagnosis and prediction due to technological advancements.

The book explores applications in soft computing and covers empirical properties of artificial neural network (ANN), evolutionary computing, fuzzy logic and statistical techniques. It presents basic and advanced concepts to help beginners and industry professionals get up to speed on the latest developments in soft computing and healthcare systems. It incorporates the latest methodologies and challenges facing soft computing, examines descriptive, predictive and social network techniques and discusses analytics tools and their role in providing effective solutions for science and technology.

The primary users for the book include researchers, academicians, postgraduate students, specialists and practitioners.

**Dr. Ashish Mishra** is a professor in the Department of Computer Science and Engineering, Gyan Ganga Institute of Technology and Sciences, Jabalpur, Madhya Pradesh, India. He has contributed in organising the INSPIRE Science Internship Camp. He is a member of the Institute of Electrical and Electronics Engineers and is a life member of the Computer Society of India. His research interests include the Internet of Things, data mining, cloud computing, image processing and knowledge-based systems. He holds nine patents in Intellectual Property, India. He has authored four books in the areas of data mining, image processing and LaTeX.

**Dr. G. Suseendran** is an assistant professor, Department of Information Technology, School of Computing Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India. His research interests include ad-hoc networks, the Internet of Things, data mining, cloud computing, image processing, knowledge-based systems, and Web information exploration. He has published more than 75 research papers in various international journals such as *Science Citation Index*, *Springer Book Chapter*, *Scopus*, *IEEE Access* and UGC-referred journals.

**Prof. Trung-Nghia Phung** is an associate professor and Head of Academic Affairs, Thai Nguyen University of Information and Communication Technology (ICTU). He has published more than 60 research papers. His main research interest lies in the field of speech, audio, and biomedical signal processing. He serves as a technical committee program member, track chair, session chair, and reviewer of many international conferences and journals. He was a co-Chair of the International Conference on Advances in Information and Communication Technology 2016 (ICTA 2016) and a Session Chair of the 4th International Conference on Information System Design and Intelligent Applications (INDIA 2017).

## Table of Contents

---

|  |     |
|--|-----|
| Chapter 1 Analytical Approach to Genetics of Cancer Therapeutics<br>through Machine Learning .....   | 1   |
| <i>Ritu Shukla, Mansi Gyanchandani, Rahul Sahu and Priyank Jain</i>  |     |
| <b>Chapter 2</b> A Study on Behaviour of Neural Gas on Images and Artificial<br>Neural Network in Healthcare .....   | 11  |
| <i>Rahul Sahu, Ashish Mishra and G. Suseendran</i>   |     |
| <b>Chapter 3</b> A New Approach for Parkinson's Disease Imaging Diagnosis<br>Using Digitized Spiral Drawing .....  | 35  |
| <i>Megha Kamble and Pranshu Patel</i>  |     |
| <b>Chapter 4</b> Modelling and Analysis for Cancer Model with Caputo<br>to Atangana-Baleanu Derivative .....   | 57  |
| <i>Ashish Mishra, Jyoti Mishra and Vijay Gupta</i>   |     |
| <b>Chapter 5</b> Selection of Hospital Using Integrated Fuzzy AHP<br>and Fuzzy TOPSIS Method .....   | 71  |
| <i>Vikas Shinde and Santosh K. Bharadwaj</i>   |     |
| <b>Chapter 6</b> Computation of Threshold Rate for the Spread of HIV<br>in a Mobile Heterosexual Population and Its Implication<br>for SIR Model in Healthcare ..... | 97  |
| <i>Suresh Rasappan and Regan Murugesan</i>   |     |
| <b>Chapter 7</b> Application of Soft Computing Techniques to Heart Sound<br>Classification: A Review of the Decade .....   | 113 |
| <i>Babita Majhi and Aarti Kashyap</i>  |     |
| <b>Chapter 8</b> Fuzzy Systems in Medicine and Healthcare: Need,<br>Challenges and Applications .....  | 139 |
| <i>Deepak K. Sharma, Sakshi and Kartik Singhal</i>   |     |
| <b>Chapter 9</b> Appliance of Machine Learning Algorithms in Prudent Clinical<br>Decision-Making Systems in the Healthcare Industry .....                            | 163 |
| <i>T. Venkat Narayana Rao and G. Akhila</i>  |     |
| <b>Chapter 10</b> Technique of Receiving Data from Medical Devices<br>to Create Electronic Medical Records Database .....  | 185 |
| <i>Vu Duy Hai</i>  |     |

## Chapter 11 Universal Health Database in India: Emergence, Feasibility

and Multiplier Effects ..... 215

*Arindam Chakrabarty and Uday Sankar Das*

## Chapter 12 Cluster Analysis of Breast Cancer Data Using

Modified BP-RBFN ..... 235

*Viswanathan Sangeetha, Jayavel Preethi,*

*Raghunathan Krishankumar,*

*Kattur S. Ravichandran*

*and Ramachandran Manikandan*

[View Less](#)

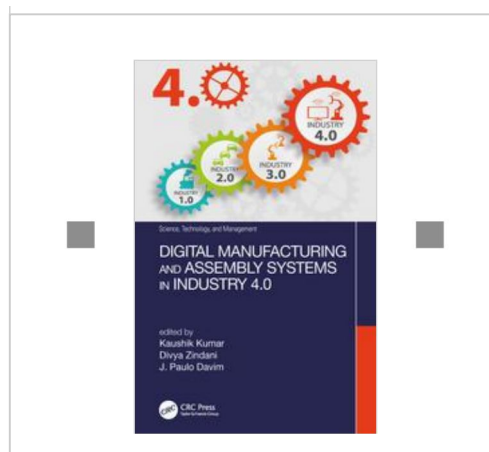
# Editor(s)

## Biography

**Dr. Ashish Mishra** is currently working as a Professor in Department of Computer Science and Engineering, Gyan Ganga Institute of Technology and Sciences, Jabalpur [M.P]. He is a qualified individual with around 16 years of expertise in Teaching, R&D with specialization in Computer Science Engineering. He is B.E., M.Tech&M.B.A. He received his Ph.D. degree from AISECT University, Bhopal, India. Been a part of various seminars, paper presentations, research paper reviews, conferences as co-convener, Member of Organizing Committee, Member of Advisory Committee, Member of Technical Committee and contribution in organizing INSPIRE Science Internship Camp. Member of IEEE, Life Member of CSI. He has published many research papers in reputed journals and conferences. He also has papers in Springer and IEEE conference. He is also a reviewer and Session Chair of IEEE international conferences, CSNT-2015, CIGN-2016, CIGN2017, INDIACOM-2019, and ICICC-CONF 2019. His research interests include IOT, Data Mining, Cloud Computing, Image Processing and Knowledge-based systems. He is published 09 patents in Intellectual Property, India. He is published 4 books in the area of data mining, Image Processing and Latex.

**G. Suseendran** received his M.Sc., Information Technology and M.Phil., degree from Annamalai University, Tamil Nadu, India and Ph.D., degree in Information Technology-Mathematics from Presidency College (Autonomous), University of Madras, Tamil Nadu, India. In additional qualification, he has obtained DOEACC 'O' Level AICTE Ministry of Information Technology and Honor Diploma in Computer Programming. He is currently working as Assistant Professor, Department of Information Technology, School of Computing Sciences, Vels Institute of Science, Technology & Advanced Studies (VISTAS), Chennai, Tamil Nadu, India which is well known University. He has years of teaching experience in both UG and PG Level. His research interests include Ad-hoc networks, IOT, Data Mining, Cloud Computing, Image Processing, Knowledge-based systems and Web Information Exploration. He has produced 4 M.Phil., Scholars and 6 Ph.D. Scholar was awarded under his Guidance and Supervision. He serves as Editor/ Editorial Board Member / Technical Committee/ Reviewer of International Journal such Arab/ Poland/ Europe/ USA journals (Thomson Reuters, SCI, Elsevier). He serves as International Committee Members towards International Conference conducted in association with IEEE, Springer and Scopus. He has published more than 75 research papers in various International Journal such in Science Citation Index, Springer Book Chapter, Scopus, IEEE Access and UGC referred journals. He has presented 35 papers in various international Conferences and authored 12 Book and received 6 awards.

**Trung-Nghia Phung** received his Engineering degree in Electronics and Telecommunications from Hanoi University of Technology (HUST) in 2002, his Master of Science in Telecommunications from Vietnam National University – Hanoi (VNUH) in 2007, and Ph.D from Japan Advanced Institute of Science and Technology (JAIST) in 2013. He was Dean of Faculty of Electronics and Telecommunications, Thai Nguyen University of Information and Communication Technology (ICTU). He is currently working as Associate Professor and Head of Academic Affairs, ICTU. He has published over 60 research papers. He was the recipient of the award for the excellent young researcher (Golden Globe Award) from Ministry of Science and Technology of Vietnam in 2008. His main research interests include speech, audio and biomedical signal processing. He serves as a technical committee program member, track chair, session chair and reviewer of many international conferences and journals. He is a co-chair of the International Conference on Advances in Information and Communication Technology 2016 (ICTA 2016), a section chair of the 4th International Conference on Information System Design and Intelligent Applications (INDIA 2017).



## Book Series

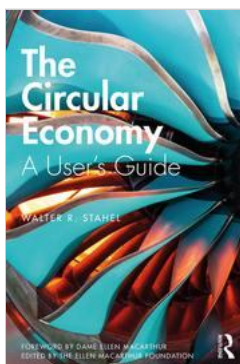
This book is included in the following series:

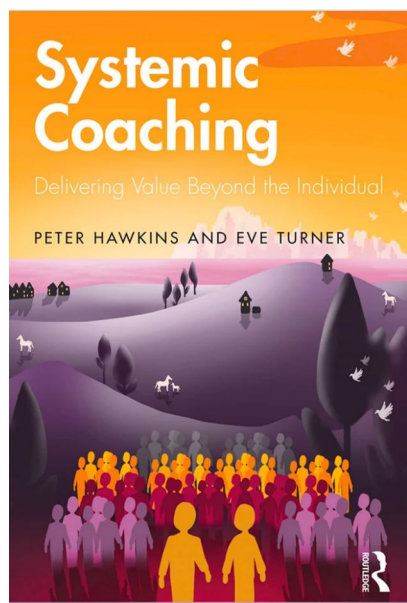
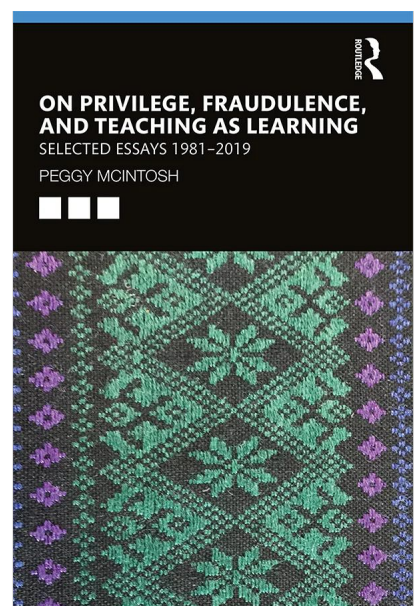
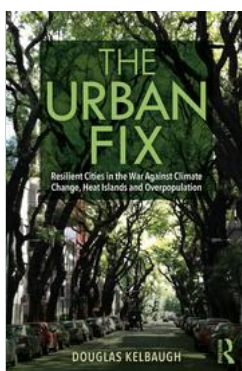
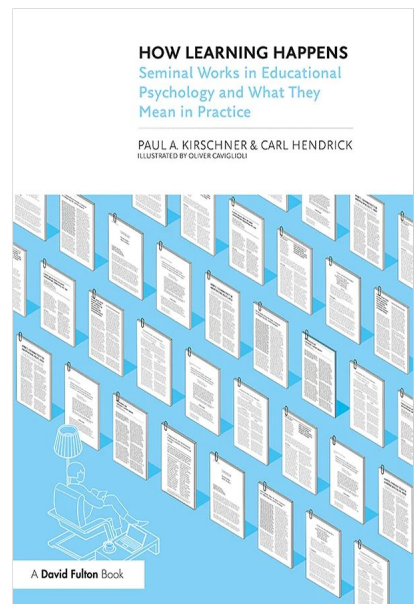
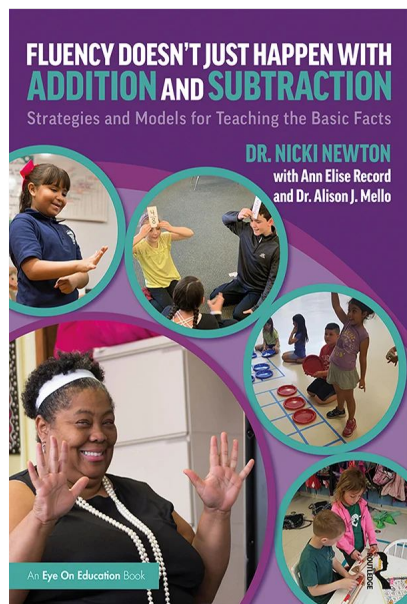
- [Information Technology, Management and Operations Research Practices](#)

## Related Subjects

- [Operations Research](#)
- [Artificial Intelligence](#)
- [Neural Networks](#)
- [Data Science](#)
- [Healthcare Process Improvement](#)
- [Algorithms & Complexity](#)
- [Computer Science \(General\)](#)
- [Intelligent Systems](#)
- [Operations Research](#)
- [Fuzzy Systems](#)
- [Health Informatics and Statistics](#)
- [Statistics](#)
- [Statistical Computing](#)
- [Healthcare Management](#)

## Recommended For You








[Back to top](#) ^



- > [Authors](#)
- > [Booksellers](#)
- > [Instructors](#)
- > [Librarians](#)
- > [Press & Media](#)
- > [Professionals](#)
- > [Societies & Associations](#)
- > [Students](#)

## CORPORATE

- > [About Us](#)
- > [About T&F](#) 
- > [Careers](#) 
- > [T&F Journals](#) 

- > [Books](#)
- > [Book Series](#)
- > [Online Platforms](#)
- > [Open Access Books](#)

## POLICIES

- > [Terms & Conditions](#)
- > [Shipping Policy](#)
- > [Returns & Cancellations](#)
- > [Inspection Copies](#)
- > [Cookie Policy](#)
- > [Privacy Policy](#) 
- > [Accessibility](#) 

[BLOG »](#)

[SALE »](#)

## CONTACT US

- > [Customer Service](#)
- > [Editorial Contacts](#)
- > [Sales Contacts](#)
- > [Rights & Permissions](#)

By using this site you agree to the [use of cookies](#).

Stay Connected



---

© 2020 Informa UK Limited, an Informa Plc company