# Contents

## Biomedical Data Analysis and Warehousing

- What Do the Data Say in 10 Years of Pneumonia Victims? A Geo-Spatial Data Analytics Perspective .......................... 3  
  Maribel Yasmina Santos, António Carvalheira Santos, and Artur Teles de Araújo

- Ontology-Guided Principal Component Analysis: Reaching the Limits of the Doctor-in-the-Loop .................................. 22  
  Sandra Wartner, Dominic Girardi, Manuela Wiesinger-Widi, Johannes Trenkler, Raimund Kleiser, and Andreas Holzinger

- Enhancing EHR Systems Interoperability by Big Data Techniques ........ 34  
  Nunziato Cassavia, Mario Ciampi, Giuseppe De Pietro, and Elio Masciari

- Integrating Open Data on Cancer in Support to Tumor Growth Analysis 49  
  Fleur Jeanquartier, Claire Jean-Quartier, Tobias Schreck, David Cemernek, and Andreas Holzinger

## Information Technologies in Brain Science

- Filter Bank Common Spatio-Spectral Patterns for Motor Imagery Classification ......................................................... 69  
  Ayhan Yuksel and Tamer Olmez

- Adaptive Segmentation Optimization for Sleep Spindle Detector ........ 85  
  Elizaveta Saifutdinova, Martin Macaš, Václav Gerla, and Lenka Lhotská

- Probabilistic Model of Neuronal Background Activity in Deep Brain Stimulation Trajectories ...................................... 97  
  Eduard Bakstein, Tomas Sieger, Daniel Novak, and Robert Jech

## Social Networks and Process Analysis in Biomedicine

- Multidisciplinary Team Meetings - A Literature Based Process Analysis 115  
  Oliver Krauss, Martina Angermaier, and Emmanuel Helm

- A Model for Semantic Medical Image Retrieval Applied in a Medical Social Network .................................................... 130  
  Riadh Bouslimi, Mouhamed Gaiith Ayadi, and Jalel Akaichi
Poster Session

A Clinical Case Simulation Tool for Medical Education ................. 141
Juliano S. Gaspar, Marcelo R. Santos Jr., and Zilma S.N. Reis

Covariate-Related Structure Extraction from Paired Data ................. 151
Linfei Zhou, Elisabeth Georgii, Claudia Plant, and Christian Böhm

Semantic Annotation of Medical Documents in CDA Context ............ 163
Diego Monti and Maurizio Morisio

Importance and Quality of Eating Related Photos in Diabetics .......... 173
Kyriaki Saiti, Martin Macaš, and Lenka Lhotská

Univariate Analysis of Prenatal Risk Factors for Low Umbilical Cord
Artery pH at Birth ..................................................... 186
Ibrahim Abou Khashabh, Václav Chudáček, and Michal Huptych

Applying Ant-Inspired Methods in Childbirth Asphyxia Prediction ....... 192
Miroslav Bursa and Lenka Lhotska

Tumor Growth Simulation Profiling ..................................... 208
Claire Jean-Quartier, Fleur Jeanquartier, David Cemernek,
and Andreas Holzinger

Integrated DB for Bioinformatics: A Case Study on Analysis of Functional
Effect of MiRNA SNPs in Cancer ....................................... 214
Antonino Fiannaca, Laura La Paglia, Massimo La Rosa,
Antonio Messina, Pietro Storniolo, and Alfonso Urso

The Database-is-the-Service Pattern for Microservice Architectures .... 223
Antonio Messina, Riccardo Rizzo, Pietro Storniolo, Mario Tripiciano,
and Alfonso Urso

A Comparison Between Classification Algorithms for Postmenopausal
Osteoporosis Prediction in Tunisian Population .......................... 234
Naoual Guannoni, Rim Sassi, Walid Bedhiafi, and Mourad Elloumi

Process Mining: Towards Comparability of Healthcare Processes ........ 249
Emmanuel Helm and Josef Küng

Author Index ............................................................. 253
Information Technology in Bio- and Medical Informatics
7th International Conference, ITBAM 2016, Porto,
Portugal, September 5-8, 2016, Proceedings
Renda, M.E.; Bursa, M.; Holzinger, A.; Khuri, S. (Eds.)
2016, X, 253 p. 109 illus., Softcover
ISBN: 978-3-319-43948-8