About this Series

The series “Studies in Computational Intelligence” (SCI) publishes new developments and advances in the various areas of computational intelligence—quickly and with a high quality. The intent is to cover the theory, applications, and design methods of computational intelligence, as embedded in the fields of engineering, computer science, physics and life sciences, as well as the methodologies behind them. The series contains monographs, lecture notes and edited volumes in computational intelligence spanning the areas of neural networks, connectionist systems, genetic algorithms, evolutionary computation, artificial intelligence, cellular automata, self-organizing systems, soft computing, fuzzy systems, and hybrid intelligent systems. Of particular value to both the contributors and the readership are the short publication timeframe and the worldwide distribution, which enable both wide and rapid dissemination of research output.

More information about this series at http://www.springer.com/series/7092
Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing
The purpose of the 18th IEEE/ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing (SNPD 2017) held during June 26–28, 2017 in Kanazawa, Japan, is aimed at bringing together researchers and scientists, businessmen and entrepreneurs, teachers and students to discuss the numerous fields of computer science, and to share ideas and information in a meaningful way. This publication captures 14 of the conference’s most promising papers, and we impatiently await the important contributions that we know these authors will bring to the field.

In Chap. 1, Maoto Inoue, Masato Shirai, and Takao Miura investigate a classification issue of sequence data. They take an approach of probabilistic classification based on Hidden Markov Model (HMM). They build a classifier to each class, apply to sequence data and estimate the class of the maximum likelihood.

In Chap. 2, Marwa Elayni and Farah Jemili present a method to train and combine several datasets from semi-structured sources with the MapReduce programming paradigm under MongoDB. It aims to increase the intrusion detection rates.

In Chap. 3, Yusuke Tanimura, Kazuto Sasai, Gen Kitagata, and Tetsuo Kinoshita propose service-oriented network management with knowledge-based network management support system. The proposed system is modularized and can be applied to fluctuating environment with less burden.

In Chap. 4, Ryotaro Okada, Takafumi Nakanishi, Yuichi Tanaka, Yutaka Ogasawara, and Kazuhiro Ohashi present a dialogue structure analysis method to visualize the transition of topics in a meeting as the one of dialogue process representation. Their method extracts topics in a meeting on time series.

In Chap. 5, Shuangshuang Cai and Mizuho Iwaihara propose a novel embedding method specifically designed for entity disambiguation. Their method jointly maps the information from hierarchical structure of knowledge and context words.

In Chap. 6, Tsukasa Endo, Hasitha Muthumala Waidyasooriya, and Masanori Hariyama propose an automatic optimization method to solve the problem of C-based OpenCL design environment FPGA (field programmable gate array) accelerators.
In Chap. 7, Takeshi Kakimoto, Masateru Tsunoda, and Akito Monden analyze whether team size and duration should be used or not, when they consider the error included in the team size and the duration. As a result, using duration as an independent variable was not very effective in many cases.

In Chap. 8, Prajak Chertchom, Shigeaki Tanimoto, Hayato Ohba, Tsutomu Kohnosu, Toru Kobayashi, Hiroyuki Sato, and Atsushi Kanai present a lifelog attribute data portfolio (LLADP) that will be used for practically modeling life events and for digitizing such information. In this article, they also propose the privacy implications of lifelogging for each attribute.

In Chap. 9, Shota Sakaue, Hiroki Nomiya, and Teruhisa Hochin propose an improved method of obtaining facial expression intensity and estimate emotional scenes based on the basic six facial expressions from lifelog videos.

In Chap. 10, Isao Kikukawa, Chise Aritomi, Shoichi Nakamura, and Youzou Miyadera conduct a study that aims to provide teachers who are contemplating to adopt active learning in existing classes with a framework that facilitates converting existing classes to active learning ones and to realize situation where teachers can instantly convert to active learning.

In Chap. 11, Yumiko Shinohara and Yukiko Nishizaki investigated differences in eye movements, especially fixation duration and location, between novice and expert drivers when driving abroad. The results show the need to develop an automated driving system that considers drivers’ driving background.

In Chap. 12, Gongzhu Hu reviews various metrics of password quality, including the one he proposed, and compares their strengths and weaknesses as well as the relationships between these metrics.

In Chap. 13, Kohei Matsumura, Yoshiko Hanada, and Keiko Ono improve the search efficiency of dMSXF by introducing a probabilistic model constructed by the search information to the generation of neighborhood solutions. In the method, the probabilistic model considers nodes individually and a node dependency is ignored.

In Chap. 14, Shingo Takeshita, Takeru Maehara, and Satoshi Ono propose a method for designing a digital watermark that detects replication of 2D code displayed on a smartphone screen. To achieve this, the proposed method designs an effective watermarking scheme for various smartphone models using multi-objective optimization including optical simulation.

It is our sincere hope that this volume provides stimulation and inspiration, and that it will be used as a foundation for works to come.

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