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Special Sessions Call for Papers
The Fifth International Symposium on Computer, Consumer and Control, 2020

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Session title: ***Artificial Intelligence for Engineering Business Management***

In recent years, the techniques of artificial intelligence (AI), including supervised machine learning methods, unsupervised machine learning methods, reinforcement learning methods, and federated learning methods, have been applied to various engineering business management applications. One of the perfect examples is Industry 4.0, where serval smart sensors have been embedded into machine tools to detect the status of these machine tools, and the techniques of AI can be used to analyze the sensing data from those smart sensors for predicting and preventing the breakdown of machine tools. Machine learning and deep learning methods have been used as a powerful tool to perform feature detection/extraction and trend estimation/forecast in engineering business management applications. Supervised machine learning methods, e.g. neural network (NN), convolutional neural network (CNN), and recurrent neural network (RNN), can be exploited in the applications pertinent to prediction and classification, whereas unsupervised machine learning methods, such as restricted Boltzmann machine (RBM), deep belief network (DBN), deep Boltzmann machine (DBM), auto-encoder (AE), and denoising auto-encoder (DAE), can be utilized for data denoising and model generalization. Furthermore, the reinforcement learning methods, including generative adversarial networks (GANs) and deep Q-networks (DQNs), can be applied in generative networks and discriminative networks to optimize the contesting process in a zero-sum game framework. These well-developed methods can contribute substantially, to better

improve predictions and classifications in the relevant applications. However, there still exist various issues to be resolved, limitations to be transcended, and improvements to be developed so that further attention is required from the research communities. Besides, the techniques of AI for engineering business management applications (e.g. competitive product design and innovation, operations and manufacturing strategy, knowledge management and innovation, decision support systems, industrial engineering for business improvement, transportation and logistics engineering, modeling of industrial and business systems, quality management and six sigma, automation of industrial processes and systems, manufacturing performance and productivity measurement, supply chain management and the virtual enterprise network, technology capital and financial modelling, engineering economics and investment models, behavioral and social factors in engineering, etc.) can be further discussed and investigated.

Topics/Areas

We invite academic researchers and industry professionals from a broad range of disciplines to submit to this special issue. Topics of interest include, but are not limited to:

- New supervised machine learning methods for engineering business management applications
- New unsupervised machine learning methods for engineering business management applications
- Novel reinforcement learning methods for engineering business management applications
- Novel federated learning methods for engineering business management applications
- New optimization methods for machine learning and the applications in engineering business management

All papers accepted and registered for presentation will be published in the conference proceedings, and excellent papers will be recommended for publication in the special issue of SCI(E)/EI journals. Please note that papers must submit via the submission system website and meet the format of IS3C2020.