

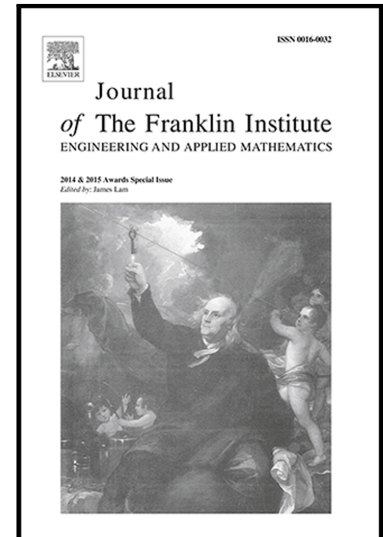
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Recent Advances in Machine Learning for Signal Analysis and Processing

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Editorial

Recent Advances in Machine Learning for Signal Analysis and Processing

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Along with the data explosion in the rapid development of internet, computer, and electronic equipment, artificial intelligence (AI) has experienced great development and attracted extensive attention in the past years. As a key part of AI, machine learning (ML) and its advanced algorithms have been thoroughly investigated and widely applied in industry and information fields due to their promising performance in large-scale data analysis and processing. Moreover, the data-driven or application-oriented signal analytic and processing applications have not only benefited a lot from the advanced ML theories and algorithms, but also promoted the development of ML, including approximation theory, learning algorithms, optimization approaches, real-time processing/hardware realization and implementations, for instance. A great number of achievements in ML theories, algorithms and its applications in data analysis have been witnessed in the research community. Hence, we launched this special issue and reported the very recent progress in advanced machine learning methodologies for signal analysis and processing.

We accepted 26 high quality papers from worldwide reputed researchers in interdisciplinary research fields. These papers covered a broad range of research fields related to ML theory, algorithms and applications, which have well reflected the most recent progress in ML. We briefly summarize the papers in the following.

Wong et al. investigated the intelligent modern engine calibration with machine learning methods. A novel iterative point-to-point engine calibration based on an initial-training-free online extreme learning machine (ELM) has been developed to incrementally learn the relationship between sensors and actuators.

Cao et al. studied the propagation distance estimation and localization methods for earth surface vibration sources. A novel frequency band energy distribution (FBED) feature has been presented to characterize periodic vibration signals. An intelligent distance estimation and localization model built on the FBED feature, support vector machine (SVM) and ELM has been developed.

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