Special Issue on
# Machine Learning in Bioinformatics and Biomedical Engineering

## CALL FOR PAPERS

Machine learning is an artificial intelligence branch that has been well applied and recognized as an effective tool to handle a wide range of real situations. In the last few years, we have witnessed the explosion of Big Data, which has enabled researchers to store data for analysis in an unprecedented way. This explosion in data available for analysis is as evident in healthcare as anywhere else.

In particular, this special issue is focused on the areas of bioinformatics and biomedical engineering. These are two of the fastest developing research fields in the last few decades, since the biological data used to provide information is rapidly generated, and it is mandatory to be able to extract information and knowledge from them, as technological innovation in these fields is to be probably one of the most important developments in the next coming years.

Many research problems in the field, such as DNA microarray classification or the identification of candidate genes and nucleotides (SNPs), are computationally hard. Machine learning techniques have become an indispensable tool to discover new biomedical and bioinformatics insights, enabling unprecedented advances yet embracing new emerging challenges with the advent of Big Data. Visualization will be undoubtedly a challenge during this postgenomic era, as researchers are trying to confront the difficulty of exploring and analyzing a huge amount of biological data as well as making the analysis and data mining possible by aiding recognition of patterns and trends.

In this special issue, we invite investigators to contribute with their recent advances addressing machine learning methods related to, or with application in, bioinformatics and biomedical engineering, as well as review articles that will stimulate the continuing efforts to understand the problems usually encountered in this field.

Potential topics include but are not limited to the following:

▶ Clinical interpretation, diagnosis, and prediction
▶ Feature selection and extraction
▶ Pattern recognition and classification
▶ Dealing with unbalanced, nonstatic, and/or cost-sensitive data
▶ Image analysis and visualization
▶ Microarray and SNPs analysis
▶ Ontologies, taxonomies, and semantic web
▶ Intelligent sensorization
▶ Data mining for knowledge discovery
▶ Security, privacy, and data integrity

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