Guest editorial

Editorial for special issue on fuzzy logic for analysis of clinical diagnosis and decision-making in health care

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Abstract. This special issue of the *Journal of Intelligent & Fuzzy Systems* contains selected articles of fuzzy logic for analysis of clinical diagnosis and decision-making in health care.

1. Introduction

Fuzzy set theory has a number of properties that make it suitable for formalizing the uncertain information upon which medical diagnosis and treatment is usually based. Firstly, it defines inexact medical entities as fuzzy sets. Secondly, it provides a linguistic approach with an excellent approximation to texts. Finally, fuzzy logic offers reasoning methods capable of drawing approximate inferences. These facts suggest that fuzzy set theory might be a suitable basis for the development of a computerized diagnosis system. This is verified by trials performed with the medical expert system CADIAG-2, which uses fuzzy set theory to formalize medical relationships and fuzzy logic to model the diagnostic process.

The process is based on the idea of an incremental simple additive model for fuzzy sets supporting and negating particular diseases. These are combined to produce an index of support for a particular disease. The process is developed to allow fuzzy symptom information on the intensity and duration of symptoms.

This special issue collect papers from the following topics:

- Mamdani-type and sugeno-type fuzzy inference systems for diagnosis of diabetes
- Analytical method for diseases prediction using machine learning techniques
- Diagnosis of kidney disease using fuzzy expert system
- Knowledge-based system for breast cancer classification using fuzzy logic method
- Fuzzy logic model for heart disease prediction using hybrid OFBAT
- Fuzzy expert system for the nephropathy control assessment in patients with type 2 diabetes mellitus
- Fuzzy inference system for children skin disease diagnosis application
- Crisp and Fuzzy decision tree for cardiovascular dysautonomias diagnosis
- Neuro-fuzzy model for risk analysis of lung cancer
- Fuzzy inference system for early diagnosis of dengue disease
- Rule based fuzzy logic approach for classification of fibromyalgia syndrome

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We get 316 submissions from overall the word. Thanks for the reviewers' kindly work, we accept 51 papers from all the 316 submissions. All the included contents were anonymously reviewed by experts to maintain academic excellence and integrity. We wish to thank all, including authors, reviewers, and all the other participants, who have directly and indirectly contributed to the release of this special issue by their engagement.