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## Analysis of Fuzzy Decision Trees on Expert Fuzzified Heart Failure Data

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Book Group Author(s): [IEEE](#)

2013 IEEE INTERNATIONAL CONFERENCE ON SYSTEMS, MAN, AND CYBERNETICS (SMC 2013)

Book Series: IEEE International Conference on Systems Man and Cybernetics Conference Proceedings

Pages: 350-355

DOI: 10.1109/SMC.2013.66

Published: 2013

### Conference

Conference: IEEE International Conference on Systems, Man, and Cybernetics (SMC)

Location: Manchester, ENGLAND

Date: OCT 13-16, 2013

Sponsor(s): IEEE; IEEE Comp Soc

### Abstract

The prevalence of heart failure is 2-3% of the adult population and it is expected to grow. Half of all patients diagnosed with it die within four years. To minimize life-threatening situations and to minimize costs, it is interesting to predict mortality rates for a patient with heart failure. In this paper, a fuzzy decision tree based on classification ambiguity and a fuzzy decision tree based on cumulative information estimations are presented. They are employed on a heart failure data fuzzified on the basis of medical expert knowledge. After a transformation of fuzzy decision trees, the use of medical expert knowledge allows us to create a group of fuzzy rules that is easily interpretable by medical experts. Our study shows that different types of fuzzy decision trees can have significantly different accuracy results and interpretability.

### Keywords

Author Keywords: [fuzzy decision tree](#); [fuzzy rules](#); [fuzzification](#); [cardiology](#); [heart failure](#)

KeyWords Plus: [MORTALITY](#); [INDUCTION](#); [MODEL](#)

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### Publisher

IEEE, 345 E 47TH ST, NEW YORK, NY 10017 USA

### Categories / Classification

Research Areas: Computer Science; Engineering

Web of Science Categories: Computer Science, Cybernetics; Computer Science, Information Systems; Engineering, Electrical & Electronic

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**Document Information**

**Document Type:** Proceedings Paper

**Language:** English

**Accession Number:** WOS:000332201900059

**ISBN:** 978-1-4799-0652-9

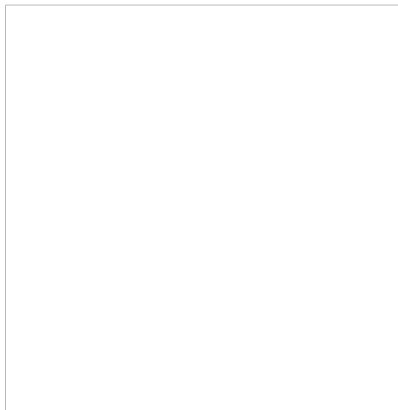
**ISSN:** 1062-922X

**Other Information**

**IDS Number:** BA0SU

**Cited References in Web of Science Core Collection:** **20**

**Times Cited in Web of Science Core Collection:** **0**



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