On Using Fuzzy Sets in Healthcare Process Analysis

Uzay Kaymak(✉)

Information Systems Group, School of Industrial Engineering, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands
u.kaymak@tue.nl, u.kaymak@ieee.org
http://is.ieis.tue.nl/staff/ukaymak/

Abstract. As the demand for health care services increases, healthcare organizations are seeking possibilities to optimize their care processes in order to increase efficiency, while safeguarding the quality of the care. Process analytics is an important input to the efforts for optimizing processes based on concrete in-formation regarding process execution. Especially, process mining has emerged recently as a promising methodology to discover process models based on data from event logs. Until now, process analysis approaches have made little use of soft computing and, in particular, fuzzy set-based techniques. Especially processes that are characterized by a large complexity, much variability, flexibility and vagueness, such as healthcare processes, can gain much from the applications of fuzzy set-based approaches in process analytics. In this paper, we provide a systematic overview of the main approaches to applying fuzzy sets to process analytics with a specific focus on the healthcare domain. In this way, we aim to point to main directions for researchers in this area.

R. A. Aliev et al. (Eds.): ICAFS-2018, AISC 896, p. 24, 2019.
https://doi.org/10.1007/978-3-030-04164-9_7