Tutorial at FUZZ-IEEE 2014

Type-2 Fuzzy Sets and Systems With an Application to Perceptual Computing

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Abstract

The main aim of this tutorial is to educate a new generation of type-2 fuzzy systems researchers. It will be in two parts:

Part 1 will concentrate on the theoretical bases and definitions of type-2 fuzzy sets and systems while giving a complete coverage of interval type-2 fuzzy systems. Results will be obtained by using type-1 mathematics, which will expedite an attendee's entry into the type-2 field because he/she will learn how to use what is already known to them, but in new and exciting ways.

Part 2 will explain Perceptual Computing (which is an aid to people making subjective judgments, as in hierarchical and distributed decision making) and demonstrate how type-2 fuzzy sets are used to implement a Perceptual Computer. It will include a case study