

Nature-Inspired Optimization of Type-2 Fuzzy Logic Controllers

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Abstract: The design of Type-2 fuzzy logic systems is a complex task and in general achieving an optimal configuration of structure and parameters is time consuming and rarely found in practice. For this reason the use of nature-inspired meta-heuristics offer a good hybrid solution to find near optimal designs of type-2 fuzzy logic systems in real world applications. In particular, type-2 fuzzy control offers a real challenge because the problems in this area require very efficient and accurate solutions; in particular this is the case for robotic applications. In this talk we present a general scheme for optimizing type-2 fuzzy controllers with nature-inspired optimization techniques, like ant colony optimization, the chemical reaction algorithm, bee colony optimization and others.