Type-2 Fuzzy Application in a Gas Metal Arc Welding Process

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Abstract: Type-2 Fuzzy Logic System has been used intensively to model nonlinear processes or with too much uncertainty. This paper presents a complement for Interval Type-2 Fuzzy Logic System which allows predicting the performance process and finds the best intervals in the type reducer and defuzzification through Genetic Algorithm. The new approach was applied to model a Gas Metal Arc welding process where the results illustrate the advantage of using the proposed complement. Hence, Interval Type-2 Fuzzy Logic System with Genetic Algorithm as complement is a good alternative method to model and predict nonlinear processes or with too much uncertainty.

Keywords: Intelligent Systems, Type-2 Fuzzy, Modeling