A FUZZY LOGIC SYMPOSIUM

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Interest in fuzzy logic has grown tremendously over the past decade, fueled both by theoretical developments and by practical insights acquired from applying fuzzy logic to a range of engineering problems. But many researchers in mainstream AI remain skeptical about the significance of fuzzy logic and its potential for providing answers to some of the enduring problems in knowledge representation, commonsense reasoning, qualitative reasoning, and learning. This skepticism has largely remained part of the AI folklore and has rarely been expressed in print.

Charles Elkan departed from this trend when he presented his paper, "The Paradoxical Success of Fuzzy Logic," at the Eleventh National Conference on Artificial Intelligence. In his paper, Elkan formally presented his misgivings about fuzzy logic, thereby providing a basis for evaluating and discussing fuzzy logic's technical and practical significance.

In view of this, the editor-in-chief of IEEE Expert, B. Chandrasekaran, and I felt that a symposium organized around Elkan's paper would be of interest to IEEE Expert readers as well as the larger AI and fuzzy logic community. We invited Elkan to contribute an updated version of his paper, which we circulated among experts in fuzzy logic and reasoning under uncertainty. We invited these experts to write commentaries on the paper, and then sent the commentaries to Elkan for rebuttal. The updated paper, the commentaries, and the rebuttal follow.

I thank Charles Elkan and the commentators for contributing to the symposium. I hope it helps explicate the misgivings some AI researchers have about fuzzy logic, and provides a forum for theoreticians and practitioners of fuzzy logic to respond to the issues raised by Elkan.