# Fuzzy Information Processing 2023

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**Why fuzzy.** In many practical situations, we need to make decisions. Many real-life decisions are difficult. For example, in air traffic control, we need to make very fast decisions on which planes should land on which runway. In such situations, we use computers to help us make good decisions.

Very often, we have only partial knowledge about the situation. An important part of our knowledge comes from experts, and experts often formulate their knowledge by using imprecise ("fuzzy") words from natural language like "small". To utilize this knowledge in our computer-assisted decision making, we need to translate imprecise expert knowledge into precise computer-understandable (i.e., numerical) terms. Techniques for such translation – pioneered by Lotfi Zadeh – are known as *fuzzy* techniques.

**Contents of this volume.** This volume contains papers presented at the 2023 Annual Conference of the North American Fuzzy Information Processing Society NAFIPS'23 (Cincinnati, Ohio, May 31 – June 2, 2023) and at the related Workshop on Constraint Programming and Decision Making CoProD'23.

Papers forming this volume deal both with general theoretical and computational aspects of fuzzy techniques – in particular, their relation to deep learning – as well as specific applications to various areas including aerospace engineering, agriculture, cosmology, demographics, finance, geosciences, medicine, and robotics.

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