Bulanık Mantık

(MÜH 425 – Bilgisayar Müh. Böl.)

Prof.Dr. Yaşar BECERİKLİ

Hafta-2
Bulanık Mantık Nedir? Temelleri.

İÇERİK

- Teorinin mucidi: Lutfi Asker Zadeh
- Bulanık Mantığa Giriş
- Bulanık Kümeler
- Temel İşlemler
- Kural Tabanı
- Bulandırma, Durulama
- Üyelik Fonksiyonları
- Çıkartım Sistemleri
- FAM tablosu,
- Uygulamalar

KAYNAKLAR

- T.J.Ross , Fuzzy Logic with Engineering Applications, 2nd Ed. John-Wiley, 2004,,

- Fuzzy Logic with Engineering Applications, 1995 T.J.Ross, McGraw-Hill

- G.Klir et al , Fuzzy Set Teory, 1997. Prentice Hall

- G Klir et al , Fuzzy Sets and Fuzzy Logic 1995 . Prentice Hall
- Kwang Hyung Lee, Fırst Course on Fuzzy Theory and Applications, Springer, 2005

Professor Lotfi A. Zadeh

http://www.cs.berkeley.edu/~zadeh/

In **1965**, **Lotfi A. Zadeh** of the University of California at Berkeley published "Fuzzy Sets," which laid out the mathematics of fuzzy set theory and, by extension, fuzzy logic. Zadeh had observed that conventional computer logic couldn't manipulate data that represented subjective or vague ideas, so he created fuzzy logic to allow computers to determine the distinctions among data with shades of gray, similar to the process of human reasoning.

General Type-2 Fuzzy Logic in Dynamic Parameter Adaptation for the Harmony Search Algorithm

Fevrier Valdez, Cinthia Peraza, Oscar Castillo (You?) | Jun 22, 2020 | ★★★★★ 4.24

This book focuses on the fields of fuzzy logic and metaheuristic algorithms, particularly the harmony search algorithm and fuzzy control. There are currently several types of metaheuristics used to solve a range of real-world of problems, and these metaheuristics contain parameters that are usually fixed throughout the iterations. However, a number of techniques are also available that dynamically adjust the parameters of an algorithm, such as probabilistic fuzzy logic ...more

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Recent Developments in Fuzzy Logic and Fuzzy Sets
Dedicated to Lotfi A. Zadeh

Shahnaz N. Shahbazova, Michio Sugeno, Janusz Kacprzyk (You?) | May 14, 2020 | ★★★★★ 4.24

This book provides a timely and comprehensive overview of current theories and methods in fuzzy logic, as well as relevant applications in a variety of fields of science and technology. Dedicated to Lotfi A. Zadeh on his one year death anniversary, the book goes beyond a pure commemorative text. Yet, it offers a fresh perspective on a number of relevant topics, such as computing with words, theory of perceptions, possibility theory, and decision-making in a fuzzy environment. ...more
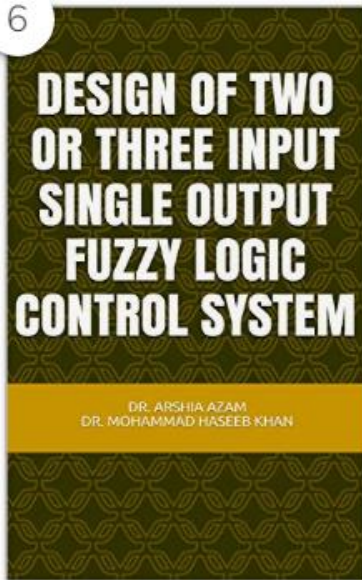
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DESIGN OF TWO OR THREE INPUT SINGLE OUTPUT FUZZY LOGIC CONTROL SYSTEM

Dr. Arshia Azam, Dr. Dr. Mohammad Haseeb Khan (You?) | Jan 1, 2020 | ★★★★★ 4.24

The conventional controllers utilizing PI or PID controllers were the obvious choice for any industrial, domestic or commercial control applications. However, these controllers have drawbacks such as; requiring exact mathematical model of the system to be controlled, sensitive to external disturbances, difficult to apply for systems with non-linearities and complexities. During external disturbances these controllers are to be tuned manually which becomes a difficult task in many applications involving frequent load variations. ...more

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E-LEARNER'S ASSESSMENTS with FUZZY LOGIC
WEB APPLICATION DESIGN AND DEVELOPMENT

Mousumi Mitra, Atanu Das (You?) | Dec 26, 2019 | ★★★★★ 4.24

WEB APPLICATIONDESIGN AND DEVELOPMENT E-Learner's assessment is an important and complicated task in the entire web-based teaching and learning process. It has a strong influence on learners' approaches to learn and their learning outcomes like professional acceptability on desired skills. This book explored some existing and new fuzzy logic-based techniques for e-learner's performance assessments and corresponding certification system design and development. ...more

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Concepts and Fuzzy Logic

Radim Belohlavek, George J. Klir, Edouard Machery, James Hampton (You?) | 2011 | ★★★★★ 4.48

Leading researchers examine the usefulness and limitations of fuzzy logic for the psychology of concepts.The classical view of concepts in psychology was challenged in the 1970s when experimental evidence showed that concept categories are graded and thus cannot be represented adequately by classical sets. The possibility of using fuzzy set theory and fuzzy logic for representing and dealing with concepts was recognized initially but then virtually abandoned in the early 1980s. ...more

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Fuzzy Logic with Engineering Applications

Timothy J. Ross (You?) | 2016 | ★★★★★ 4.33

Considers potential applications and use cases, business opportunities that can arise, and how standardization activities are shaped Covers the technical findings of the two-year EC H2020 5G PPP 5GCAR project, a comprehensive collaborative research initiative between telecommunications and automotive industries, as well as academic researchers 5G C-V2X technology is expected to be fully standardized in 3GPP Release 16 by March 2020, which has the potential to shape the 5 -year and beyond roadmap on the path towards fully automated vehicles Use cases, business models and the technology roadmap provide the necessary background for those who are seeking to shape a start-up in the domain of automated and autonomous driving Expert editor and contributor team from a mix of both industry and academia, including Ericsson, Huawei, Nokia, Orange, and Bosch Accompanying online tutorial slides for teaching and seminars ...more

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