

Special issue on “Fuzzy System Applications in Human-Machine Interface”

Guest Editors: *Gunasekaran Manogaran, Hassan Qudrat-Ulla, Qin Xin*

Purpose:

A fuzzy system is a mathematical system that takes analog values as input and analyzes the input values as logical entities which take continuous values between 0 and 1. Unlike digital logic which is discrete, fuzzy logic is continuous in nature. A fuzzy system works successfully even with noisy and distorted data. Fuzzy systems are predominantly deployed to provide precise solutions to complex problems which involve automatic decision making capabilities. Fuzzy systems are deployed across several domains ranging from aerospace engineering for satellite and aircraft control, automobiles for speed and traffic control, chemical industry for distillation process, artificial intelligence based applications such as natural language processing, video analytics and processing, expert systems for decision making and also in the field of Human-machine Interfaces also referred to as Human Computer Interface (HCI). Human Machine Interaction is an interdisciplinary which cuts across several disciplines such as computer science, bio informatics, physics, electronics and media science. Human machine interaction has paved way to develop several applications that involve developing effective models to develop conceptual models that analyze human behaviors, gestures and even state of mind depicting emotions. Fuzzy systems are coupled with human machine interactive systems to promote better decision making and predictions. Fuzzy logic enables continuous behavioral analysis and makes precise decisions. Also the complex logic involved in fuzzy systems provides high level of security to the implementation logic. Though fuzzy systems are considered as one of the better approaches to provide best solutions to biologically inspired problems, the main challenge is that there is no systematic manner to explain the solution to a problem. Similarly arriving at a proof for a problem is again difficult to show and it requires solving mathematical expressions to back the results. Several research works have been directed towards mitigating these challenges and expanding the range of fuzzy based human machine interactive systems for several domains.

This special issue on “Fuzzy System Applications in Human-Machine Interface” is intended towards providing an excellent platform for enriching the application of fuzzy based systems and promoting the same for Human machine interface development.

The following topics are welcome but not restricted to:

- Fuzzy system based human machine interfaces for human behavior analysis.
- Fuzzy system based human machine interfaces for emotion recognition.
- Fuzzy system based human machine interfaces for developing mental models.
- Fuzzy system based human machine interfaces for cognitive research.
- Fuzzy system based human machine interfaces for health care applications.
- Fuzzy system based human machine interfaces for patient therapy.
- Fuzzy system based human machine interfaces for smart surveillance.
- Fuzzy system based human machine interfaces for market analysis.
- Fuzzy system based human machine interfaces for smart education.
- Fuzzy system based human machine interfaces for bioinformatics.
- Fuzzy system based human machine interfaces for manufacturing.
- Fuzzy system based human machine interfaces for automobile and logistics.
- Fuzzy system based human machine interfaces based medical image analysis.
- Fuzzy system based human machine interfaces for image and video analytics.

Important Dates

Paper Submission Deadline	25-07-2020
Author notification	15-10-2020
Revised papers submission	15-12-2020
Final Acceptance	20-02-2021

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IMPORTANT: Submissions must include “Fuzzy System Applications SI” in the title of the paper. This can be removed after acceptance and upon final submission. IOSPress will complete the final formatting and correspond with the authors and deal with copyright. However, they will not format references; please see the website for the correct format."

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