

## *Call for Papers*

### **A Special Issue on Fuzzy-Deep Neural Network Learning in Sentiment Analysis (Deadline for Submissions 15 Jan 2024)**

#### **1. Aims and Scope**

Sentiment analysis, also known as opinion mining, is an emerging field that involves the automatic identification and categorization of opinions expressed in textual data. This process is referred to as sentiment mining. Sentiment analysis is becoming an increasingly important task in a variety of domains, including business, politics, and social media, due to the growing amount of text data accessible on the Internet. Current challenges in sentiment analysis include the uncertainty and indeterminacy of the data and the difficulty of processing multiple aspects and opinions in a single text. Despite the significant advances that have been made in sentiment analysis using deep neural networks, these challenges are among the current challenges of sentiment analysis.

The use of fuzzy logic has proven to be an efficient method for dealing with ambiguity and unpredictability in decision-making processes. Researchers have succeeded in developing models that can successfully capture the ambiguity and vagueness associated with sentiment analysis thanks to the incorporation of fuzzy logic into deep neural networks. The combination of deep neural networks and fuzzy logic has led to the development of fuzzy deep neural network models capable of capturing the complexity and nuances of sentiment analysis.

The use of fuzzy-deep neural networks for sentiment analysis has several advantages, including (1) The handling of ambiguity and vagueness in the data has been improved, leading to results that are both more robust and more accurate. (2) The use of fuzzy logic in deep neural networks allows for the representation of ambiguity and vagueness in the data, ultimately leading to a more accurate representation of the sentiment conveyed. (3) Improved ability to handle multiple perspectives and viewpoints within a single text. Fuzzy logic allows numerous facets and viewpoints to be expressed within a single text, allowing the subtleties and complexities associated with sentiment analysis to be captured. (4) Improve the ability of models to be interpreted and explained. When deep neural networks are combined with fuzzy logic, the resulting models are more interpretable and explainable, paving the way for a better understanding of the results. (5) A higher degree of flexibility across a wide range of topics and languages. The use of fuzzy deep neural network models allows for adaptation to different domains and languages, which in turn makes the models more adaptable and useful in a wider variety of contexts. We welcome original research contributions, including but not limited to:

#### **2. Topics Covered**

Authors are invited to submit their original and unpublished work concerning tools and techniques, a special emphasis will be on:

- The development of fuzzy-deep neural network models for opinion mining, e.g., fuzzy

clustering, fuzzy decision trees, and fuzzy-rule-based systems.

- Integration of fuzzy logic into deep neural networks for use in sentiment analysis
- Studies in cutting-edge sentiment analysis models that use fuzzy logic
- Applications of fuzzy-deep neural network models in sentiment analysis
- Develop interpretability and explainability of fuzzy-deep neural network models in sentiment analysis
- Evaluation and analysis of membership functions used in fuzzy-deep neural networks
- Public sentiments and communication patterns of public health emergencies using fuzzy-deep neural network models
- Resources for subjectivity, sentiment, emotion and social media analysis that use fuzzy models
- Fuzzy Multimodal emotion detection and classification
- Fuzzy Applications of sentiment and emotion mining

Main fuzzy system application areas include, but are not limited to: bioinformatics, business and finance, decision-making, e-learning, e-administration, healthcare, security, sensors, automation, robotics, manufacturing, logistics, electrical and power engineering, telecommunication, and several engineering fields (e.g. environmental, electrical, civil). Only papers directly related to Fuzzy systems regarding data science and big data issues will be considered to adhere to the Aim and Scope of IEEE Transactions on Fuzzy Systems available on the journal website here: <https://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=91>

### 3. Submission Guidelines

Ensure your paper is within the scope of this Special Issue. All authors should read 'Information for Authors' before submitting a manuscript at <https://cis.ieee.org/publications/t-fuzzy-systems>. Submissions should be through the IEEE TFS journal website <http://mc.manuscriptcentral.com/tfs-ieee>. Submissions should also be in the correct format <https://cis.ieee.org/publications/t-fuzzy-systems/manuscript-format>.

- It is essential that your manuscript is identified as a Special Issue contribution
- Ensure you choose 'Special Issue' as the type of paper when submitting
- A cover letter must be included which includes the title '**Fuzzy-Deep Neural Network Learning in Sentiment Analysis**'
- We do not consider papers previously published in conference proceedings.

### 4. Important Dates

- Submission deadline: 15 January 2024
- First round decision: 15 April 2024
- Final decision: 15 May 2024
- Publication (tentative): Q3 2024

### 5. Guest Editors

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