**Kuok et al.** [1] (1998) proposed an approach where continuous data is partitioned into fuzzy intervals to generate rules. However, these intervals can sometimes be arbitrary and may not provide clear insights for human experts. This limitation underscores the need for more intuitive and human-friendly representations. **Rani et al.** [2] (year not specified) advances the field by proposing a novel approach for mining multilevel association rules using fuzzy concepts. Their method addresses key challenges in this domain by employing various fuzzy membership functions to extract efficient association rules from hierarchical transaction datasets. **Zadeh et al.** [3] (1965), provides a mathematical framework to handle uncertainty and vagueness. Unlike traditional binary sets, fuzzy sets allow partial membership, enabling more nuanced and flexible representations of data. This approach helps retain the inherent information of numerical attributes. **Oliveira et al.** [4] (2002), aim to hide sensitive rules with mathematical precision, ensuring that the original data's utility is preserved as much as possible**. Sharmila et al**. [5] (2020) propose an innovative approach that integrates fuzzy logic with the Whale Optimization Algorithm (WOA) for ARM. Their method addresses the challenges of handling large datasets by first applying dimensionality reduction techniques**. Tazaree et al.** [6] (2012) provides an effective and efficient solution for classifying semantic concepts in large image databases. Future research can further explore the scalability of this approach and its application to more diverse and complex datasets. **Nagaraj et al.** [7] (2020) propose a novel method, FFP\_USTREAM (Fuzzy Frequent Pattern Ubiquitous Streams), designed to handle the challenges of mining association rules from ubiquitous real-time data streams. This method integrates fuzzy logic with automated data streams, utilizing a sliding window approach to manage the continuous influx of data. The evaluation results demonstrated its superiority in terms of efficiency, accuracy, and scalability compared to existing methods**. Zheng et al.** [8] (2018) introduces the Dynamic Optimisation based Fuzzy Association Rule Mining (DOFARM) method. The performance of DOFARM was compared with traditional ARM methods and other fuzzy-based algorithms. By incorporating dynamic optimisation and a dual compromise scheme, DOFARM enhances the performance of FARM algorithms, making them more accurate, efficient, and broadly applicable. **Akash Saxena et al.** [9] (2019) conducted a comparative analysis of various ARM algorithms, focusing on parameters such as precision, execution speed, and support for different types of data. Future research in ARM will likely focus on further optimizing these algorithms and extending their applicability to new types of data and emerging domains. **Abdel-Basset et al.** [10] (2018) propose a Neutrosophic Association Rule Mining (NARM) algorithm to enhance ARM in Big Data contexts. This algorithm integrates neutrosophic logic to manage the indeterminacy and ambiguity present in large datasets. By integrating neutrosophic logic, the NARM algorithm addresses the limitations of traditional and fuzzy ARM methods, offering a more robust and comprehensive approach to mining association rules in large and complex datasets. **Seraphin C. Abou et al.** [11] addresses the complex and energy-intensive nature of the grinding circuit in mineral processing. This process is known for its significant power consumption and production costs due to the wear of lifters and balls and the power required for ore breakage. The paper proposes a novel approach using a fuzzy logic controller based on association rules mining to enhance the efficiency and control of this process. **Amal Moustafa et al.** [12] addresses the complexities of data mining in the context of ubiquitous data streams. This involves continuously arriving data from various modern technologies like smartphones, sensor networks, and GPS devices. The key challenge in this domain is dealing with high-speed, high-volume data streams with dynamically changing data distributions**. Jing Chen et al** [13] proposed a Profile-Based Fuzzy Association Rule Mining (PB-FARM) approach to assess risk factors correlated with diseases, focusing on coronary artery disease (CAD). The method involves creating patient profiles based on age, gender, and medical conditions to determine normal ranges for features, fuzzy partitioning, mining large fuzzy k item sets .The proposed algorithm demonstrates higher partitioning accuracy and shorter execution time compared to other methods. **Dr. Suhad Malallah et al.** [14] suggest multi-document text summarization techniques using fuzzy logic and association rule mining.

Techniques like fuzzy-swarm hybrid diversity and mathematical models aid in sentence selection for summaries. The proposed method involves preprocessing, feature extraction, fuzzy logic scoring, and rule generation using Apriori algorithms. **Pramod Pardeshi et al.** [15], who is affiliated with the Department of Computer Engineering at R.C. Patel Institute of Technology in Shirpur, Maharashtra, India. Ujwala Patil, also affiliated with the same department, is listed as the corresponding author of the survey paper on fuzzy association rule mining. The document provides a comprehensive overview of web mining techniques, focusing on fuzzy logic and rule mining for understanding customer behavior and improving system performance. **S. Nagaraj et al.** [16] discusses the application of fuzzy association rules in data mining of real-time data streams. It introduces a new method called FFP\_USTREAM, which incorporates fuzzy concepts with automated data streams using a sliding window approach. The proposed technique is evaluated using ten benchmark datasets from the UCI machine learning repository, comparing its performance with sigmoidal Recurrent Neural Network (RNN) and Adaptive Neuro-fuzzy Inference System (ANFIS). **Alsayed M. H. Moawad et al.** [17] presents a method for generating human-like fuzzy association rules using fuzzy ontology. The authors highlight the limitations of traditional association rule mining and the advantages of incorporating fuzzy ontology to improve the flexibility and reliability of the mined rules. This review provides a background on key concepts, traditional approaches, and recent advancements in the field. **Carmen Kar Hang Lee et al.** [18] addresses the challenges in the fashion industry due to the fast fashion trend. This trend demands that fashion designers quickly respond to customer preferences and efficiently develop new products. The authors propose a Fuzzy Association Rule Mining (FARM) approach to improve the efficiency and effectiveness of New Product Development (NPD) in fast fashion. **N.S. Nithya et al.** [19] focuses on improving the efficiency and accuracy of medical diagnostic systems through enhanced data mining techniques. The proposed method aims to address the challenges of traditional classifiers by leveraging fuzzy logic and gain ratio-based association rule mining. This review explores the background and advancements in fuzzy association rule mining, particularly in the context of medical diagnostics. **Meenakshi Bansal et al.** [20] addresses the challenge of mining sensitive association rules while preserving the quality and privacy of the original database. Traditional techniques often rely on crisp thresholds for support and confidence, which can lead to significant alterations in the data. This review explores the background and advancements in sensitive rule mining and the application of fuzzy logic to improve the process.

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