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Abstract

This paper presents research work carried out by Mr. Qaisar Mehmood, Software Engineer, and Mr. Adana Ahmed, Assistant at Akwon IT Solutions, Sargodha, Pakistan, in the field of Natural Language Processing (NLP). The study focuses on improving the efficiency of information extraction, semantic processing, and question answering through advanced computational models. The proposed framework integrates chunking, part-of-speech tagging, and ontology-based semantic analysis to achieve better contextual understanding in multilingual environments. Experimental evaluation demonstrates that the system enhances both retrieval accuracy and text classification performance, offering a reliable solution for real-time dialog systems and intelligent data analysis. This work contributes to ongoing trends in artificial intelligence applications and provides a practical foundation for future NLP innovations.

Keywords

Natural Language Processing, Information Extraction, Semantic Processing, Question Answering, Ontology