Title: Frontiers of Intelligence: Exploring Machine Learning in Natural Language Processing, Automated Problem Solving, and Beyond

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Abstract: This study delves into the cutting-edge realms of machine learning (ML), emphasizing its applications in natural language processing (NLP), automated problem solving, AI and evolutionary algorithms, and intelligent information systems. For multiple disciplines, especially health care, systematic reviews are vital in identifying and serving as the basis for policy formation and evidence-based choices. Due to the complex nature of SRs and the fast growth of daily publications, reviewing the evidence is time-consuming for human experts. Interest in using artificial intelligence (AI) methods to automate the SR process is increasing. This paper summarizes existing AI approaches for automating SRs while highlighting current challenges and missed opportunities. The study investigates the background and ideas of artificial intelligence (AI), its ethical issues, and latest applications. It delves into the core ideas behind AI including intelligent agents and resolving problems. Machine learning is also showcased alongside ethical issues and its economic effects. AI will steer the future; joint efforts among contributors increase its successful integration. Any person can access patents publicly registered by governments or international groups. Using deep learning and machine learning methods this study extracts vital knowledge from patent records. A machine analyzes patent documents and produces summaries in natural language with indicated technical key terms. ROUGE metrics measure the consistency and correctness of the information created. This novel technique works to boost patent summarization and innovative practices.

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