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AI based Operating System

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Abstract: *This review paper examines the potential applications of artificial intelligence (AI) in the development of an operating system (OS) that not only provides functionalities for software and hardware management, as well as common system services, but also integrates intelligent management capabilities. Advanced AI techniques such as expert systems, neural networks, pattern recognition, fuzzy logic prediction, and other AI features can be leveraged in the creation of such an AI-based OS. Features of an AI-based OS may include abstraction, associative AI thinking, perceptual intelligence, contextual imagination, context-specific search, context priming, and various other AI methodologies. Integrating and using smart agents based on large language models (LLMs) face tough challenges that affect how well they work. These challenges include problems like not scheduling and sharing resources efficiently for agent requests on the LLM, difficulties in keeping track of context when agents interact with the LLM, and the complexity of blending different agents with various skills and specialties. The rising number and complexity of agents often cause problems like bottlenecks and inefficient use of resources. To tackle this, our paper introduces AIOS, a unique operating system that incorporates a large language model. This innovation gives the operating system a kind of "intelligence" and brings us closer to achieving Artificial General Intelligence (AGI). AIOS is designed to better manage resources, help agents switch between tasks smoothly, allow multiple agents to work at the same time, offer tools for agents, and control access to the system. We explain how AIOS works, highlight the main issues it solves, and provide a basic overview of its design and implementation.*

Keywords: AIOS, LLM, fuzzy logic prediction, intelligence management system

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