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**LLM-Powered Multi-Agent System for Next-Generation ERP
Platform: Intellicycle**

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DECLARATION

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ABSTRACT

Enterprise Resource Planning (ERP) systems struggle most of the time with usability limitations and rigid workflows, hindering efficient user interaction and dynamic decision-making. To address these challenges, this research proposes Intellicycle, an AI-enhanced multi-agent framework that integrates fine-tuned large language models (LLMs) hosted on Hugging Face, coordinated using the AutoGen framework. Key agents such as the Orchestrator Agent, Mixture of Experts (MoE) Core Agent, Browser Agentic AI, and Data Analyst Agent collaborate with each other to interpret user intent, generate queries, provide UI guidance, and deliver actionable insights. The system was developed using Angular for the frontend, .NET for backend services, and Azure SQL for data storage. Model building and training was conducted on Google Colab. Thorough Evaluation through system testing and user feedback showed improvements in query resolution speed, task automation, and user satisfaction, positioning Intellicycle as a scalable and intelligent solution for next-generation ERP systems.

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