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Java's Edge in AL/ML

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Abstract: *Artificial Intelligence (AI) and Machine Learning (ML) have transformed industries such as healthcare, finance, autonomous systems, and cybersecurity. Python has emerged as the dominant AI/ML language due to its simplicity, extensive libraries, and strong community support. Libraries such as TensorFlow, PyTorch, and Scikit-learn enable rapid prototyping and implementation of complex models. In contrast, Java, widely used in enterprise applications, has yet to gain significant traction in AI/ML development despite its robustness, platform independence, and strong ecosystem.*

This study explores Java's viability for AI/ML by conducting a comparative analysis with Python and other AI/ML languages. It examines Java's performance, available libraries, and ease of use in AI/ML tasks while identifying areas for improvement, such as specialized AI frameworks, better integration with existing tools, and enhanced community support. Real-world case studies illustrate Java's application in AI/ML, showcasing successful implementations in industries where Java is already well established. By analyzing these examples, this research highlights Java's potential for broader AI/ML adoption and provides a roadmap for leveraging its strengths while addressing its shortcomings..

Keywords: Java Programming, Artificial Intelligence, Machine Learning, AI/ML Integration

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