

# A Comprehensive Overview of Machine Learning Algorithms and Their Real-World Applications

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**Abstract:** *Machine Learning (ML), a crucial branch of Artificial Intelligence (AI), is dedicated to developing systems that can learn from data and improve their performance without explicit programming. This paper presents a comprehensive overview of major machine learning algorithms, including supervised, unsupervised, and reinforcement learning methods. It also discusses the wide-ranging applications of ML across industries such as healthcare, finance, and autonomous systems. Furthermore, the importance of machine learning in today's data-driven world is highlighted, along with future research possibilities aimed at addressing current challenges and enhancing capabilities*

**Keywords:** Machine Learning, Algorithms, Supervised Learning, Unsupervised Learning, Reinforcement Learning, Application

