

Artificial Intelligence Algorithms: A Comprehensive Analysis

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Abstract: *Artificial Intelligence (AI) is among the most revolutionary technologies of the 21st century, transforming industries, organizations, and society. At the heart of AI are algorithms that enable machines to learn, adapt, and make decisions. This paper provides a detailed analysis of AI algorithms, their types, use cases, and challenges. Focus is given to supervised, unsupervised, and reinforcement learning algorithms, along with hybrid approaches such as self-supervised and neuro-symbolic learning. Ethical concerns, security risks, and future directions of AI research are also discussed.*

Keywords: Artificial Intelligence, Machine Learning, Supervised Learning, Unsupervised Learning, Reinforcement Learning, Deep Learning, Neural Networks, Explainable AI, Quantum AI, Data Ethics

