

**Abstract:** Machine Learning (ML) has become one of the most disruptive technologies in such fields as finance, healthcare, disaster management, big data analytics, intelligent transportation systems, behavioral economics, radiomics, and human-computer interaction. The literature review is based on over forty peer-reviewed publications and provides one of the unified views of applications, advancements, challenges, and emergent trends of ML. Improvements in deep learning, generative AI, anomaly detection, supervised and unsupervised learning, multimodal learning, GAN-based data generation, ethical AI, and optimization methods are also covered in the review. This review shows the impact of machine learning on industries, positioning it as a predictive analytics tool, decision-making tools, automation, and real-time intelligent systems and highlights it through compiling studies on how machine learning is transforming industries published in 2017 to 2025. Some of the critical technical problems such as interpretability, fairness, data quality, scalability and real time deployment are also discussed. The research directions are outlined in the future in the context of explainable ML, hybrid AI systems, integrated multimodal architectures, and responsible AI frameworks.

**Keywords:** Artificial Intelligence, Behavioral Economics, Machine Learning, VANET.