

Overview of Artificial Intelligence in Medicine

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Abstract: *Interest in Artificial Intelligence (AI), including techniques like fuzzy expert systems, Bayesian networks, and artificial neural networks, grew rapidly during the 1980s and 1990s, with a major focus on healthcare applications by 2016.*

This document explores the use of Machine Learning (ML), a sub-field of AI, for medical diagnosis—the process of identifying a disease or condition based on a patient's symptoms, history, and physical check-up. AI is used to create machines that can think and act like humans, often surpassing human capability in speed and data utilization. ML enables these machines to learn from data, make predictions, and improve their future performance through experience.

Key Applications and Techniques

AI in medicine is divided into virtual (ML/Deep Learning) and physical (robots, medical devices) branches. ML includes three main types: Supervised learning (prediction/classification), Unsupervised learning (pattern finding), and Reinforcement learning (trial and error).

In diagnosis, ML uses pattern recognition to create prototypes (simplified disease summaries) from millions of past patient examples, allowing for a much faster and efficient diagnostic search than searching every single case. Popular supervised methods for diagnosis include Decision Trees, Support Vector Machines (SVMs), and Deep Learning..

Keywords: Artificial Intelligence

