Literature Survey: Applications of Artificial Intelligence in Healthcare

Introduction:

Artificial Intelligence (AI) is revolutionizing the healthcare sector, offering innovative solutions to longstanding challenges. This literature survey synthesizes existing research to provide a comprehensive overview of the diverse applications of AI in healthcare, spanning diagnostics, treatment planning, and patient care.

Diagnostic Imaging:

Numerous studies (Esteva et al., 2017; Gulshan et al., 2016) highlight the efficacy of AI algorithms in diagnostic imaging, such as interpreting medical images for early detection of diseases like cancer. AI systems demonstrate promising accuracy, aiding clinicians in making more precise and timely diagnoses.

Predictive Analytics for Disease Prevention:

AI's predictive capabilities play a vital role in identifying individuals at risk of developing certain medical conditions. Research by Rajkomar et al. (2018) and Miotto et al. (2016) underscores the potential of machine learning models in analyzing patient data to predict disease onset and facilitate preventive interventions.

Treatment Personalization:

Tailoring treatments to individual patient characteristics is a complex task facilitated by AI. Studies (Topol, 2019; Cabitza et al., 2017) delve into the application of machine learning in analyzing patient data to recommend personalized treatment plans, improving overall treatment efficacy.

Natural Language Processing in Healthcare Records:

AI's ability to process and understand natural language has been harnessed for analyzing vast amounts of healthcare data present in electronic health records. Examples include the work by Liao et al. (2019) and Mullenbach et al. (2018), demonstrating the potential of natural language processing in extracting valuable insights for better patient care.