Paper Information

Title: Machine Learning in Healthcare: A Comparative Review of Techniques and Applications

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Summary of the Introduction

The paper introduces machine learning (ML) in healthcare as a rapidly expanding field that enhances disease diagnosis, prediction, patient monitoring, and personalized treatment. It notes that while numerous studies apply ML to specific health issues, there is a lack of comprehensive comparative reviews summarizing algorithm performance across different healthcare domains. The paper aims to address this gap by providing a consolidated overview of ML techniques and their effectiveness.

Summary of the Problem Statement

Although ML is widely applied in healthcare, most studies focus on single diseases or specific algorithms. There is no centralized comparative assessment of how various ML methods perform across multiple healthcare applications. This limits researchers' ability to select optimal models for broad or emerging health problems. The paper aims to compile and analyze performance data from multiple studies to offer comparative insights.

Research Objectives

Main Objective

To conduct a comprehensive comparative review of machine learning algorithms used in healthcare in order to evaluate their performance across different medical applications and guide future ML-driven healthcare research.

Specific Objectives

• To compile comprehensive information about machine learning algorithms used in healthcare.

• To systematically review and compare the performance of ML algorithms across healthcare applications.

• To identify top-performing ML techniques for specific healthcare tasks.

• To provide insights that guide future ML research and development for improved patient outcomes.

Research Gap

Existing studies often examine ML applications in isolation, focusing on single diseases or individual algorithms. There is a lack of unified analysis comparing ML performance across multiple healthcare domains. This paper addresses that gap by consolidating and evaluating findings from diverse ML-related healthcare research.