

Digitization and Advanced Analytics of Medical Records for Enhanced Healthcare Delivery

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Abstract: Managing and digitizing medical data in the healthcare industry presents significant challenges, particularly when dealing with physical prescriptions and patient records. MedSync is an advanced platform designed to streamline this process by leveraging Optical Character Recognition (OCR) technologies, such as Amazon Textract, to accurately extract text from medical documents. By integrating machine learning techniques like TF-IDF and Cosine Similarity, the system enhances data organization and accessibility while providing users with essential details about medications, including their composition, usage guidelines, potential side effects, and user ratings. Additionally, MedSync features an AI-powered chatbot to assist patients with their inquiries, improving access to healthcare information. Its predictive analysis component allows for the early detection of potential health risks by analyzing historical medical records. By incorporating these technologies, MedSync aims to enhance the efficiency, accuracy, and accessibility of healthcare data management. This paper explores the methodology, outcomes, and impact of MedSync in digitizing and standardizing medical records, ultimately improving patient care and supporting data-driven decision-making.

Keywords: AI-powered Chatbot, Health Risk Detection, Data-Driven Decision-Making, Efficiency in Healthcare Data, Healthcare Information Accessibility, Historical Medical Records

