PROJECT PROPOSAL

PROJECT NAME:	Medical Handwritten Prescription Interpreter

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BACKGROUND

- llegible handwritten prescriptions cause medication errors, wrong dosages, and serious health risks, including preventable deaths. This occurs because many healthcare facilities, especially in developing regions, cannot afford electronic prescription systems, forcing doctors to continue handwriting prescriptions that pharmacists struggle to read and patients fail to understand. This problem urgently needs solving as it directly threatens patient safety and wastes healthcare resources. The Medical Handwritten Prescription Interpreter uses artificial intelligence to automatically read and digitize handwritten prescriptions, ensuring accurate medication dispensing, reducing errors, and making prescriptions clear for everyone.

INTRODUCTION

- The main goals of the Medical Handwritten Prescription Interpreter are to develop an AI system capable of accurately reading and interpreting handwritten prescriptions with high precision, minimizing misreadings, while automatically converting them into clear, structured digital text. The system aims to improve workflow efficiency by reducing the time pharmacists and healthcare staff spend deciphering unclear prescriptions, streamlining medication dispensing processes and reducing workload pressure.

PROJECT SCOPE

The scope includes designing and training machine learning models using computer vision and optical character recognition (OCR) techniques to accurately read handwritten text and drug names. The system will process prescription images as input and output structured, machine-readable prescription data in a digital format. The solution will be developed as a user-friendly application accessible through web with a focus on affordability and deployment in resource-limited healthcare settings. The scope also includes testing the system's accuracy and reliability across diverse handwriting styles and prescription formats.

PROPOSED SOLUTION

The Medical Handwritten Prescription Interpreter will be an AI-powered application utilizing computer vision and a YOLO model to automatically detect and predict handwritten text and drug names in prescription images. The system will process uploaded prescriptions through trained neural networks, extract key prescription information, and output digital prescription data. The application will be deployed via Streamlit, providing a user-friendly interface accessible through web browsers. This cost-effective solution will integrate with existing pharmacy systems, reducing medication errors, improving workflow efficiency.

EXISTING SOLUTIONS

Several solutions have already been developed to tackle the problem. Some notable examples include:

1. **MediScribe** – An open-source Flask-based web app that uses CNN and Tesseract OCR to recognize and convert handwritten prescriptions into digital text.
2. **ScanPlus** – A React + Flask-based web application that allows users to upload prescriptions and view extracted text. It provides a modern front-end interface but mainly focuses on general handwriting recognition.
3. AI Prescription Saathi – A commercial solution offering prescription digitization and integration with hospital systems. It has a polished UI, but it is not open-source and is often inaccessible to smaller clinics or pharmacies due to subscription costs.

DATASET & RESOURCES

1. **Doctor's Handwritten Prescription BD dataset**
2. **Doctor Handwriting Recognition Dataset**
3. **Medical Prescription Recognition using ML**
4. **Exploring Optical Character Recognition**