

AI-Driven Medical Fundraising Verification System to Detect and Prevent Fraudulent Treatment Requests

Abstract

Medical Fund refers to financial assistance provided to individuals or families in need of support for medical treatments, surgeries, or emergencies. Such initiatives often rely on crowdfunding platforms, social media campaigns, or charitable organizations to raise funds. However, the rise of Medical Fund Fraud has become a significant challenge, where fraudsters fabricate treatment documents or bills to solicit donations deceitfully, undermining the trust of donors and affecting genuine beneficiaries. Existing fraud detection systems are often manual or semi-automated, requiring human verification of submitted documents. These processes are time-consuming, error-prone, and struggle to identify sophisticated fraudulent attempts. The lack of comprehensive and automated mechanisms further exacerbates the issue, leading to donor skepticism and reduced willingness to contribute. This project offers an AI-driven approach to detect and block fraudulent medical fund requests. It incorporates advanced YOLOv8 for detecting text regions in uploaded treatment bills and PaddleOCR for extracting and recognizing the text. The extracted information—such as hospital names, patient details, and treatment costs—is verified against a trusted hospital dataset using the Fuzzy Matching Algorithm, which measures the similarity between extracted text and stored records to identify discrepancies effectively. By automating text detection, recognition, and pattern matching, this system ensures accurate verification of medical fund requests, safeguarding donor contributions and fostering trust in medical crowdfunding efforts.

Software Requirements

- **Python 3.8 or above:** For implementing the application logic and integrating AI models
- **Flask:** For building the web application and handling the backend.
- **YOLOv8:** For text detection in uploaded medical treatment bills.
- **PaddleOCR:** For text recognition from detected text regions.
- **Fuzzywuzzy:** For implementing the Fuzzy Matching to verify document authenticity.
- **OpenCV:** For image preprocessing and manipulation.
- **MySQL Server:** For storing user and medical treatment data, and verified hospital datasets
- **WampServer:** For hosting the database locally during development.