

Kidney Matching Mobile Application using Artificial Intelligence

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Abstract. Every year there were over 150,000 chronic kidney patients recorded, and 90% of these patients need a kidney transplant to survive. But still, there is no proper system to match kidneys and communicate between kidney patients and donors. As a solution, an AI-based mobile application was designed to match the HLA reports and communicate between donors, patients, and doctors. The application will use an OCR model to extract data from the HLA report and it will use the extracted data to match the HLA report using a script specified for match HLA reports. The OCR model will be trained to extract decimal numbers and alphabetical characters. The advantage of using OCR technology was to extract the data accurately and to reduce fraud that most kidney patients face nowadays. The application will provide a chat platform to communicate between donor and patient. And a private channel to communicate with experienced doctors. This will allow both patients and donors to get doctor's assistance with their issues free of charge. Above mentioned chat platform is designed to develop using a custom XMPP server. According to the survey, 56% haven't found a kidney in the right time period and 99% would like to use a mobile application for HLA matching. With these results, it seems this application will be a great support to kidney patients and donors to find matching kidneys without any time wastage and without being caught in fraud. And this app will allow patients to communicate with doctors who are willing to help with their needs.

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