

Data Analysis of COVID-19 Hospital Records Using Contextual Patient Classification System

The paper proposes a system for analysing COVID-19 patient data to aid in resource allocation and treatment planning during the pandemic. The study focuses on classifying COVID-19 and non-COVID-19 patients using the Knuth–Morris–Pratt algorithm, analyzing various patient characteristics, and studying the death versus survival ratio for COVID-19 positive patients. The proposed system achieved a classification accuracy of 97.4% and aims to assist in better preparedness for future waves of the pandemic. The research highlights the importance of data analysis and contextual patient classification in healthcare resource management during crises like the COVID-19 pandemic.

The proposed contextual patient classification system in the paper involves the following steps:

- **Data Organization:** The raw data obtained from the hospital, including patient lists, registration lists, ward lists, medicine lists, service lists, test lists, and discharge summary lists, is organized and processed for analysis
- **Contextual Patient Classification:** A contextual patient classification system is used to classify patients into COVID-19 and non-COVID-19 categories based on the information present in the discharge summaries. This classification is achieved through a contextual search method using the Knuth–Morris–Pratt (KMP) algorithm for pattern matching. Keywords like 'COVID', 'COVID-19', and 'CORONA' are identified and used for classification
- **Analysis:** After classification, the data is further analysed to identify differences in various aspects between COVID-19 and non-COVID-19 patients.
- **Exporting Data:** Following the insertion of attributes and analysis, the dataset is exported as an Excel sheet using the Pandas library for further processing and visualization

This system aims to provide a structured approach to analyzing COVID-19 patient data from discharge summaries to facilitate better resource allocation and preparedness for future waves of the pandemic.