

## ABSTRACT

The ability to predict diseases based on symptoms is a transformative step in enhancing healthcare services. This **Symptom-Based Disease Prediction using deep learning** project utilizes machine learning and deep learning models to diagnose potential diseases from user-reported symptoms. By leveraging sophisticated predictive algorithms, the system is trained to extract critical features from natural language symptom descriptions and accurately classify a range of medical conditions

The model processes input text to identify key symptom patterns, analysing descriptions of common and complex symptoms. These extracted features are used for prediction tasks, allowing the system to identify likely conditions such as infections, chronic illnesses, and rare diseases. Additionally, the model is capable of handling diverse symptom inputs, accounting for variations in language and presentation, which enhances its prediction accuracy.

This data-driven approach provides a scalable and non-invasive solution for symptom analysis, supporting early detection of illnesses. When integrated into a clinical or self-assessment setting, the system offers valuable decision support, aiding healthcare professionals and users in making informed choices, thereby contributing to improved patient care and health outcomes.

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