LEVERAGING DEEP LEARNING TO OPTIMIZE MEDICO LEGAL MANAGEMENT AND PREDICT SERVICAL CANCER OUTCOMES

Ms.INDUMATHI, RITHIKA P, RONI ABIYAK, SAKANA K, SALOMI PRICYA

Cervical cancer remains a significant global health concern, and early detection is key in reducing death rates. Traditional screening methods like Pap smears and HPV tests need expert analysis and may not be easily available in remote areas. This project presents a deep learning-based cervical cancer prediction system using a Bidirectional Long Short-Term Memory (Bi-LSTM) model. The system processes medical and lifestyle parameters. Preprocessing techniques, such as normalization and imputation techniques, are used before training. The Bi-LSTM model then predicts the risk of cervical cancer and classifies patients into minimal, low, moderate, or high-risk categories. It also provides preventive care recommendations. Based on the skills acquired in the Academic subjects App Development and Web Technology, the system uses Flask for the backend and React.js for the frontend, delivering a responsive and user-friendly web application. Features include user login, data input, prediction, and advice modules. Performance is measured using accuracy, precision, recall, and a confusion matrix, showing high reliability in risk prediction. Future activities include developing a mobile app and connecting to hospital databases to make the system more accessible and impactful.