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Disease Prediction using Classification of Blood Cells Smear Images

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Abstract: *This study presents a unified system for classifying blood cells, predicting blood-related diseases, and providing personalized dietary recommendations. The system uses a Convolutional Neural Network (CNN) to classify blood cells from microscopic images into categories like red blood cells (RBCs), white blood cells (WBCs), and platelets. Extracted features such as cell size, shape, and texture improve classification accuracy. A machine learning model combines the classification results with optional patient data (e.g., age, hemoglobin levels) to predict diseases such as anemia or leukemia. Following disease prediction, a rule-based module offers dietary recommendations, such as iron-rich foods for anemia. The system is designed for healthcare providers and patients, with a user-friendly interface for data input and result visualization. This framework integrates diagnostic automation with personalized nutrition, supporting early detection and health management*

Keywords: Blood smear Images, Convolutional neural network(CNN) , YOLO, Disease detection, Medical images analysis.