A Comparative Analysis of MATLAB and Python Neural Networks for Diabetes Prediction

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In recent years, artificial intelligence (AI) has become an integral part of many everyday applications. The growth of AI is bringing intellectual benefits to humans. It is revolutionizing discovery, learning, communication, and work. Machine learning, especially deep learning, is critical to this progress, providing complex models to process data more effectively. Neural networks, which emulate biological processes, find applications across diverse fields, notably in medicine, where they automate disease diagnosis and prediction tasks, such as diabetes. This paper proposes a comparative analysis between Python and MATLAB for diabetes prediction using a dataset with 100,000 individuals. The study conducts simulations on both platforms and validates the results using metrics such as precision, specificity, accuracy and F-measure. Additionally, the study emphasizes the importance of platform selection based on considerations of functionality and cost, offering insights into optimizing outcomes in healthcare applications.

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