4. Risk Assessment and Mitigation

Several potential risks have been identified, along with strategies to mitigate them:

• Data Privacy and Compliance Issues: Anonymizing datasets and ensuring HIPAA/GDPR compliance with strict access controls.

• Data Quality and Missing Information: Performing rigorous exploratory data analysis (EDA) and applying imputation techniques to address gaps.

• Model Bias and Ethical Concerns: Using diverse datasets, fairness-aware algorithms, and regular audits of model predictions.

• Deployment and Integration Challenges: Conducting extensive testing and ensuring model interoperability with existing healthcare systems.

• Model Performance Degradation Over Time: Implementing real-time monitoring and periodic retraining using new data.