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23CSE362 ASSIGNMENT
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Q1.How do interoperability and cybersecurity challenges affect edge deployment metrics in healthcare?

Answer - The ability of a device to communicate, exchange data, and work effectively is called interoperability in edge computing.

In healthcare, the edge computing devices have to work with a lot of devices to communicate and exchange data, all these devices may use different data formats and different communication protocols. This may lead to interoperability issue. When Interoperability issues arise, data transfer becomes difficult and the overall efficiency of the edge computing system gets affected. With increase in interoperability problems, delays may occur in the system which is very dangerous for healthcare systems.

Cybersecurity->Since data about an individual's health condition is to be kept very confidential, edge computing devices must contain strong encryption, secure access control, and meet standards like HIPAA.

But increasing security will add more load to the device which may cause the device to run slower.

Conclusion - Both Interoperability and Cybersecurity are very essential for edge computing devices. On the other hand, proper resource management and task allocation has to be done for the most efficient work.

Q2. Key Metrics to Measure Latency and Accuracy in Healthcare Edge Systems

Answer -

In healthcare edge computing, two important performance indicators are latency and accuracy.

• Latency is the time taken for a response to be given after data is received. In medical care, latency is to be avoided at any cost. Delays must not be allowed in emergency cases. With edge computing, data is processed near the patient, so delay is reduced and faster response is given.

-> Key metrics to measure - End-to-end delay (ms) Inference time (ms) Network delay (ms)

• Accuracy is the measure of correctness of the result. Wrong predictions must not be made because they may lead to wrong treatment. So, high accuracy must be ensured through proper testing and training.

->Key metrics to measure - Total correct predictions / Total predictions

Q3.Benchmarks to Measure Edge AI Reliability in Diagnostics

Answer-

• Precision and Recall: These scores should be calculated. Precision shows how many correct