Q1: How Edge AI reduces latency and enhances privacy

1. Reduced Latency

- In cloud-based AI, data must travel from the device → to the cloud → get processed → return with a response.
- This round trip takes time, especially if the network is slow or unstable.
- **Edge AI eliminates this delay** by doing computations *on the device itself*.
- As a result, devices react **instantly**, which is essential for real-time decision-making.

Example: An autonomous drone using Edge AI can detect obstacles or track objects *immediately*, because it doesn't need to wait for cloud processing.
This allows it to make split-second flight decisions and avoid collisions.

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2. Enhanced Privacy

- Cloud processing requires sending raw data—often sensitive—to external servers.
- **Edge AI keeps data on the device**, reducing exposure and lowering the risk of interception or unauthorized access.
- Only necessary insights (not raw personal data) may be sent to the cloud.

Example: A drone surveying farmland stores images locally and processes them on-board. Instead of uploading full images to the cloud, it only sends summaries like crop health analytics, keeping sensitive geographical data private.