

San Diego State University

Real-time Perception and Navigation for a Humanoid Robot over 5G

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CONTEXT

- Who: Ari the robot \bullet
- What: Realtime navigation and 3D \bullet mapping
- **Where: KTH R1 Reactor Hall** \bullet

CONTEXT

- Who: Ari the robot, 5G connected edge
- What: Realtime navigation and 3D \bullet mapping
- Where: KTH R1 Reactor Hall

CONCLUSIONS

- **Dynamic offloading can prevent** failure!
- **TODO: finer-grained tradeoff** \bullet between CPU, network contention

60

–– Latency Threshold

120



OBSERVATIONS

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Resource contention on device leads to performance degradation, variation, failure



250

200

150

100

50

Resource contention on network leads \bullet to performance degradation, failure





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