Fog-assisted robotics

Cloud technologies enable robot systems to be endowed with powerful capability by placing an intelligent brain in the Cloud infrastructure

- However, it is difficult to enforce SLAs in the network between the robots and the Cloud
- Fog computing distributes resources and services anywhere along the continuum from cloud to things

Demo

Runtime discovery of compute nodes and relevant hardware capabilities:

- Provision of native applications:
  - Wi-Fi access point + Robotic brain
- Fleet formation and remote control of the robots for coordinated and synchronized movement:
  - Latency-sensitive task
  - Robots stop and change the direction of the movement when an obstacle is detected

fog05 defines a set of abstractions to unify the compute, storage and communication fabric end-to-end across the cloud-to-thing continuum

- The abstraction used to provision and manage applications, or network functions, is the **entity**
- An entity can be a virtual machine, a container, a unikernel, a binary executable, or a Directed Acyclic Graph (DAG) of entities

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