ETH zürich

Center for Sustainable Future Mobility (CSFM)

MILE: Multimodal robotIc Last milE

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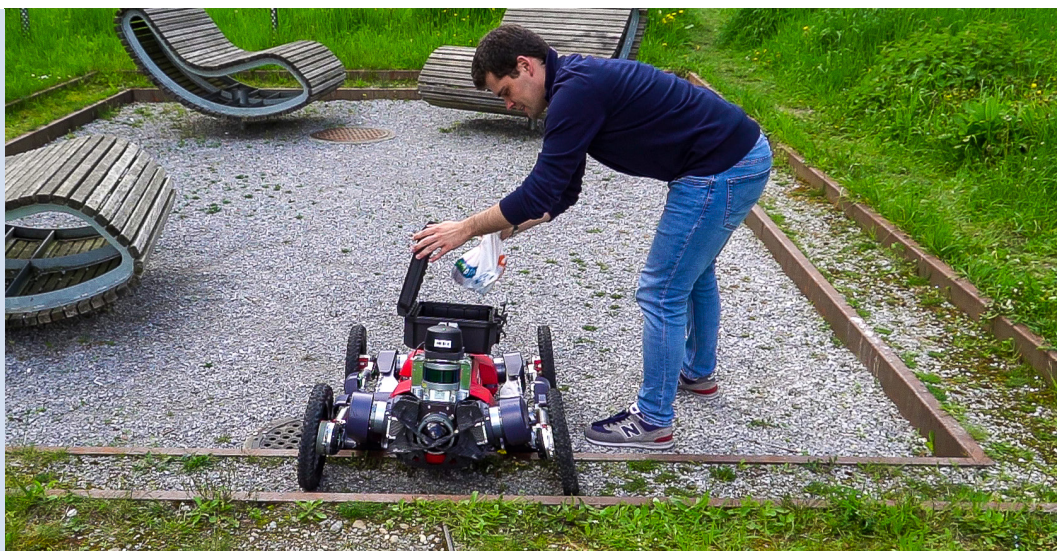
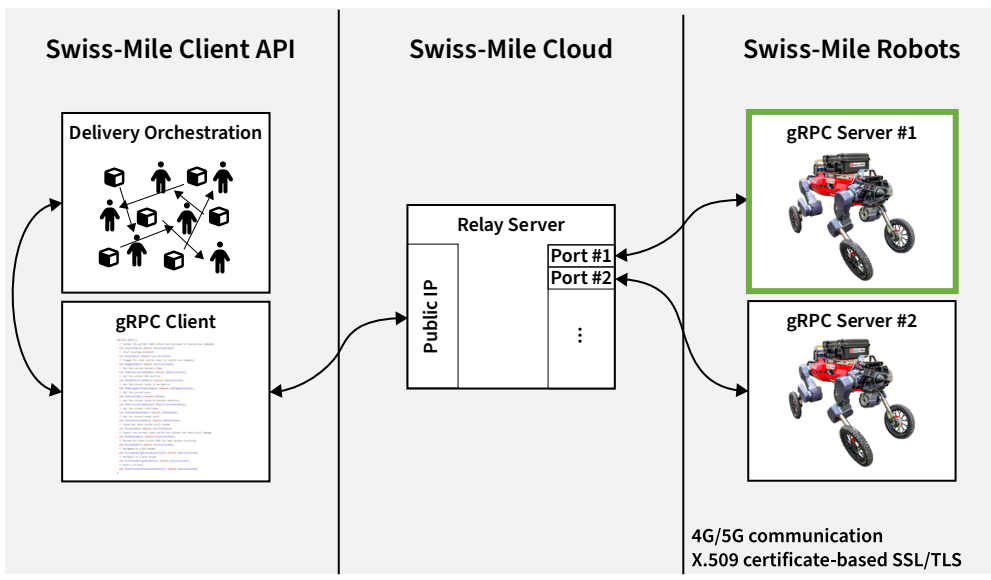
1 Introduction

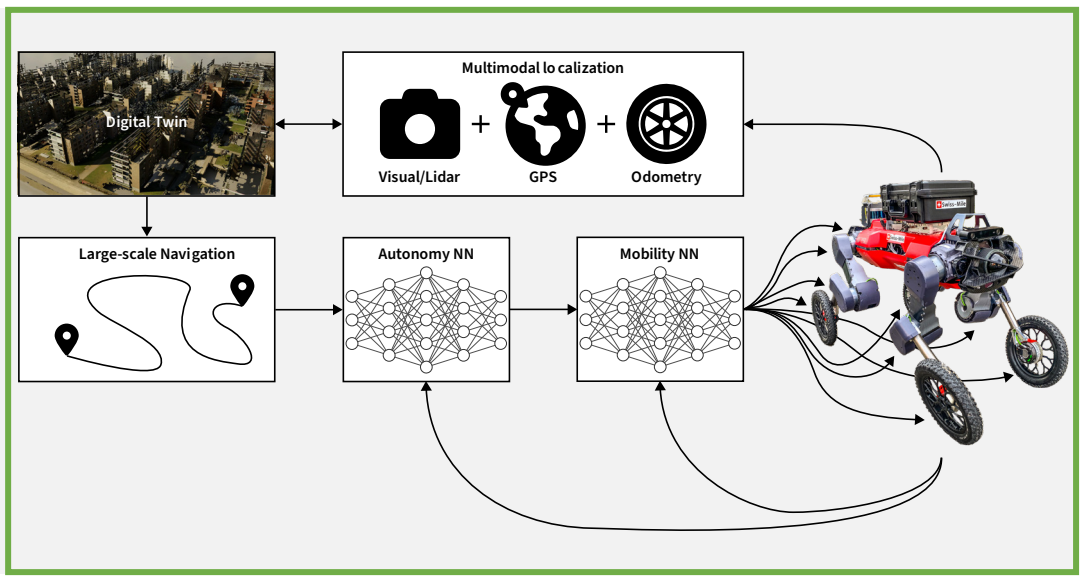
MILE targets autonomous robots for smart last-mile delivery:

- Future mobility require a solution for last-mile delivery that can carry payloads over long distances and challenging terrain.
- Our wheeled-legged robot is the only solution to carry up to 70 kg over long distances efficiently and fast while overcoming obstacles.
- The robot extends the reach of legged and wheeled delivery platforms and drones.



2 Delivery that scales





3 Results


Multiple delivery missions in Glattpark (ZH)


Pedestrians and obstacle avoidance


Terrain negotiation

4 Conclusions and next steps

- ✓ **Localization:** Combine various sensor measurements in our multimodal localization.
- ✓ **Collision-free paths:** Autonomously identify and plan local navigation routes on traversable terrain, while avoiding static and dynamic obstacles.
- ✓ **Long-range navigation:** Plan a safe long-range navigation path to other target locations.
- **Overall logistics context (next):** Analyze the feasibility of a robotic solution in the context of last-mile delivery around mobility hubs and other logistics centers, e.g., AMAG.

Mobility

Autonomy

Digital Twin

Partner: amag

CSFM