The impact of agent definitions and interactions on multiagent learning for coordination

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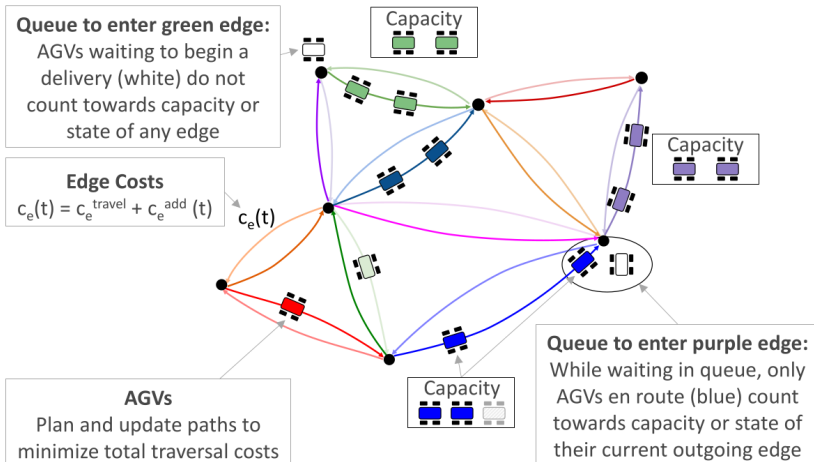Kagan Tumer, Roland Siegwart
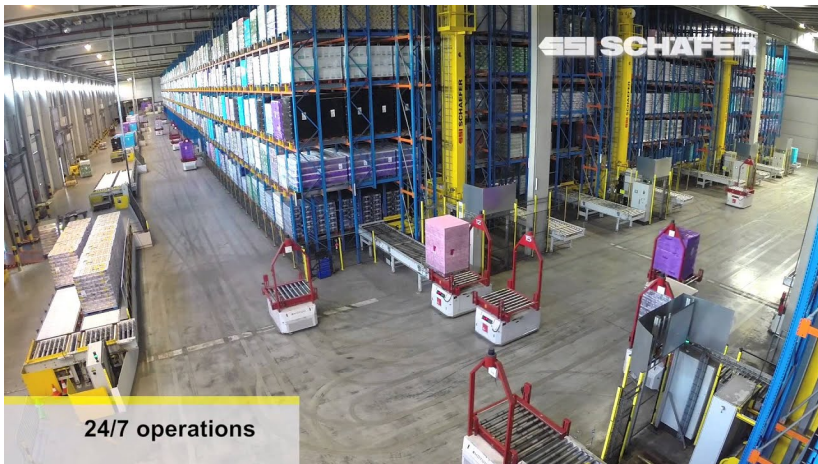Presentors: Kallinteris Andreas, Orfanoudakis Stavros

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Domains with easily flexible agent defintions:

- Autonomus Traffic Management
- Network Routing
- Powerplant Control

Traffic Managment Domain

Queue to enter green edge:
AGVs waiting to begin a delivery (white) do not count towards capacity or state of any edge

Edge Costs
$c_e(t) = c_e^{travel} + c_e^{add}(t)$

$c_e(t)$

Capacity

Capacity

Capacity

AGVs
Plan and update paths to minimize total traversal costs

Queue to enter purple edge:
While waiting in queue, only AGVs en route (blue) count towards capacity or state of their current outgoing edge

24/7 operations

Variables

Cost for a AGV for traversing an edge

- $cost_e(t) = cost_e^{travel} + cost_e^{add}$

The Capacity of an edge (based on the physical space)

- cap_e