

Multi-Agent Systems in Traffic and Transportation

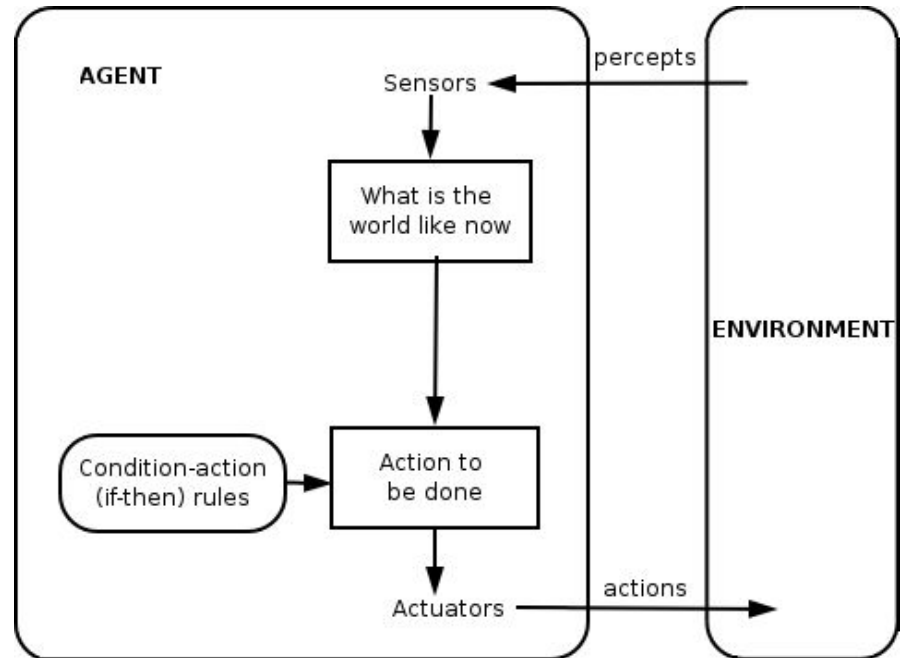
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Introduction

Multi-Agent Systems are extremely helpful in traffic management

They are a collection of independent agents

They help in creating a more dynamic and safe system





Applications

1. Traffic management

Planning, implementing, testing and managing traffic

2. Traffic guidance and control

Interaction between different mean of transport, to improve overall efficiency

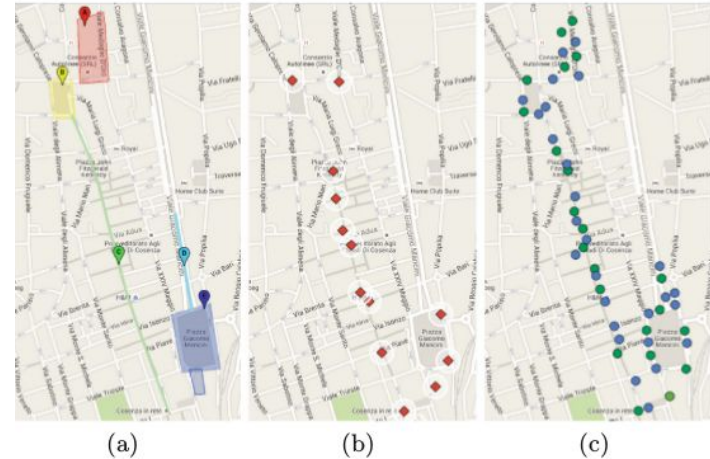
3. Capacity and resource management

Optimization of transport routes, and vehicle allocation, to lower costs and pollution

Current projects

SmartCity Cosenza, by Res-Novae

1. Target areas
2. Computational Nodes
3. Sensors nodes



KITS Advanced Traffic Management System

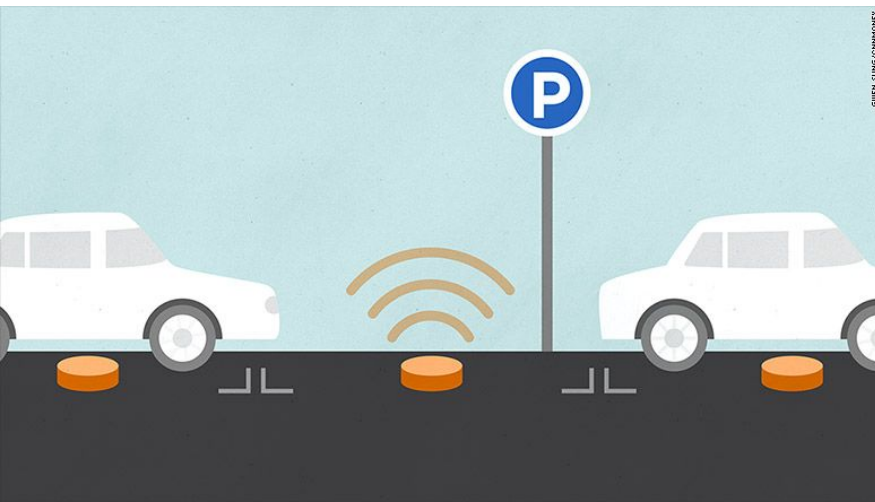
In Austin, Texas

Mostly useful for cyclists



An ideal future

Parking



Social memory



Tesla



Agent-oriented traffic simulation

-Padang, Indonesia: Tsunami evacuation <http://matsim.org/gallery/padang>

-Quito, Ecuador: Traffic congestion and pollution: <http://matsim.org/gallery/quito>

MATSim
Multi-Agent Transport Simulation





Challenges and conclusions

- Vehicle to vehicle communication
- Building a trust-network
- Passenger interaction
- Ethical issues