



Last mile delivery innovations

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Drones



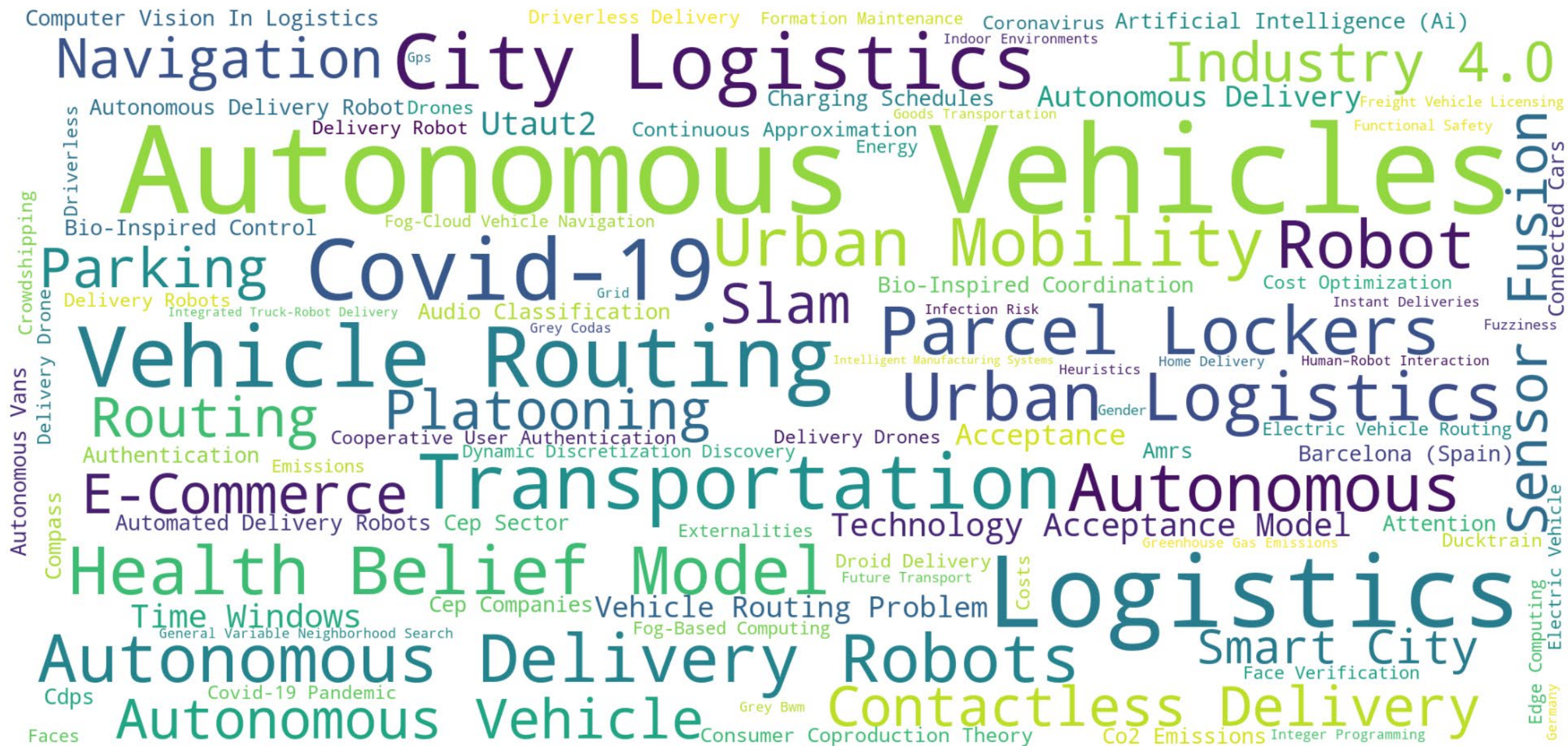
Traveling Salesman Problem
Drone Delivery Vehicle Routing Problem
Unmanned Aerial Vehicle
Uav Drone Routing
Logistics Parcel Delivery
Unmanned Aerial Vehicles

Safety
Heuristic
Branch-And-Cut
Unmanned Aerial Vehicle (Uav)
Mixed Integer Linear Programming
Path Planning
Adaptive Large Neighborhood Search
E-Commerce
Delivery
Integer Programming
Sustainability
City Logistics
Blockchain
Energy Consumption
Aerial Drones
Truck
Scheduling
Heuristics
Transportation
Vehicle Routing
Optimization
Robust Optimization
Genetic Algorithm
Simulated Annealing
Traveling Salesman
Urban Logistics
Drones
Routing
Parcel
Delivery
Unmanned Aerial Vehicles

Mixed-Integer Programming



Autonomous delivery robots (ADRs)



City Depots/Collaborations/Consolidations/Shared



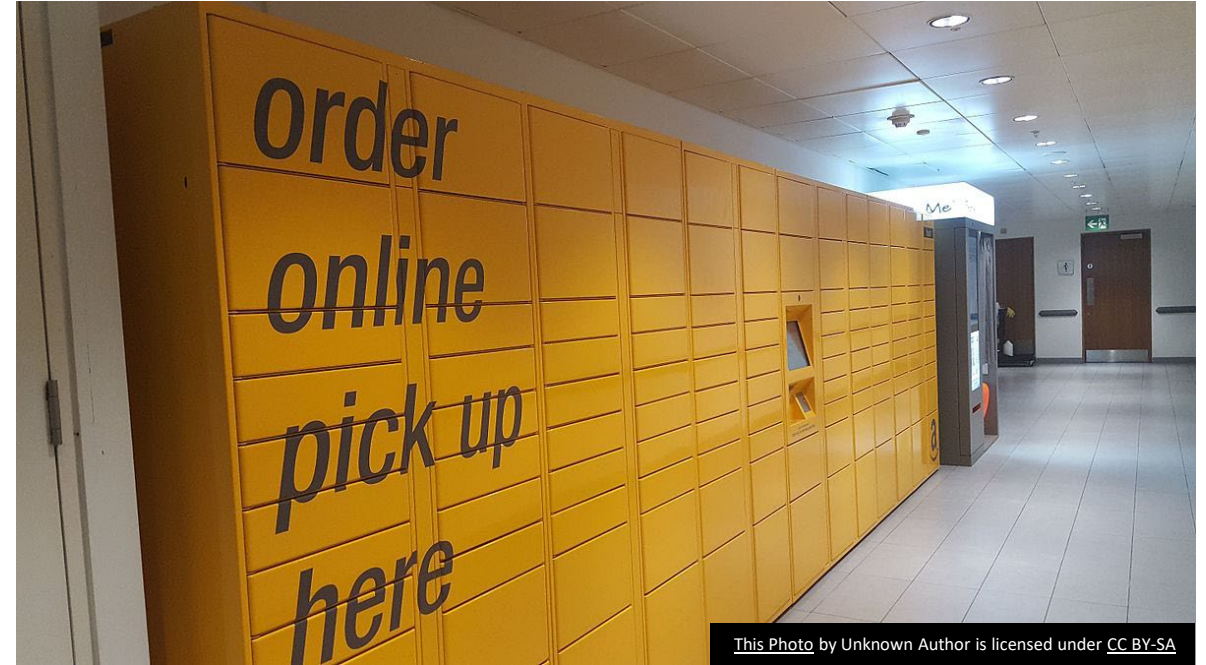
City depot labels

- localised storage depots
- micro-depots
- several cross-dock facilities
- transshipment facility
- urban transshipment points
- parcel mobile hubs
- access hubs
- bundling hubs
- micro-hubs
- urban freight micro-hubs
- city hubs
- urban logistics hubs
- loading hubs
- mobile access hubs
- “Container-as-a-Warehouse” operation
- intermediate storage locations
- intermediate service points
- proactive satellite stations
- intermediate locations (satellites)
- satellites
- mobile satellites
- satellite depots
- on-street satellites
- intermediate depots
- eco-transfer system
- micro-consolidation centres
- micro-urban consolidation centres
- mobile depot
- urban consolidation centres

Crowdshipping

A person is walking from left to right, pulling a black rolling suitcase. They are wearing a yellow long-sleeved shirt, blue sneakers, and a blue checkered hat. They are also carrying a black bag and a small white object in their right hand. The background is a plain, light-colored wall and floor.

Pedestrian couriers (porters)

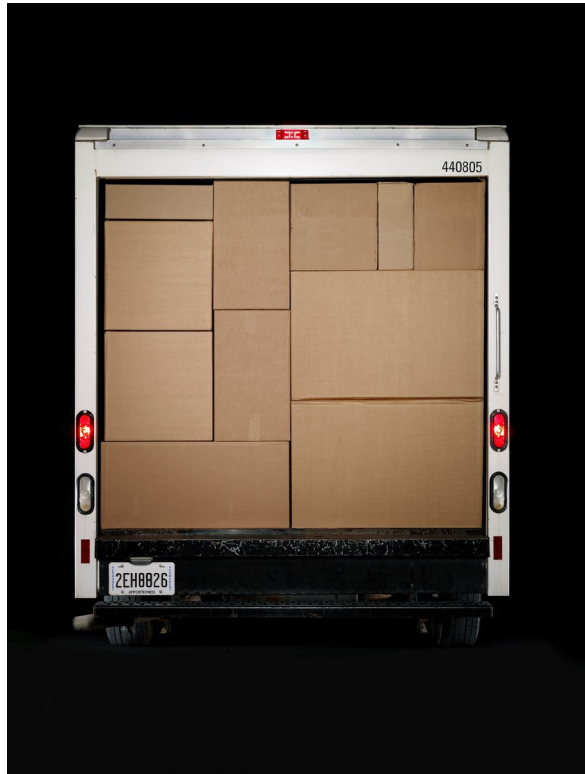


CDPs & parcel lockers



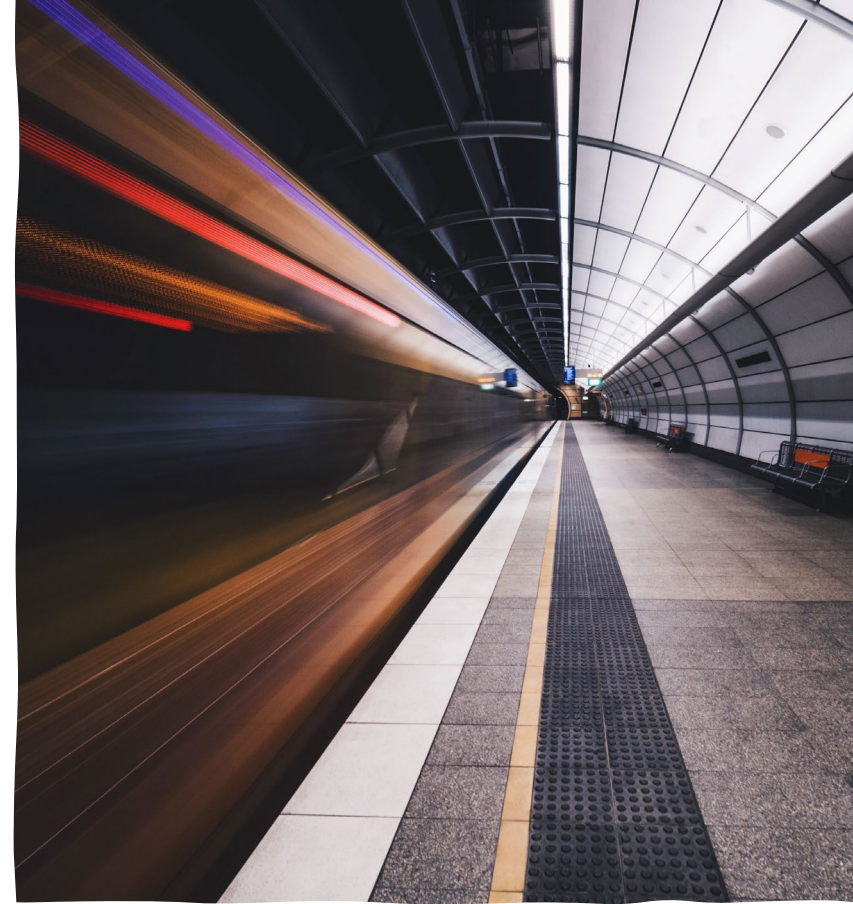
Alternative drop-off

Curbside usage



Public transport





Underground
logistics



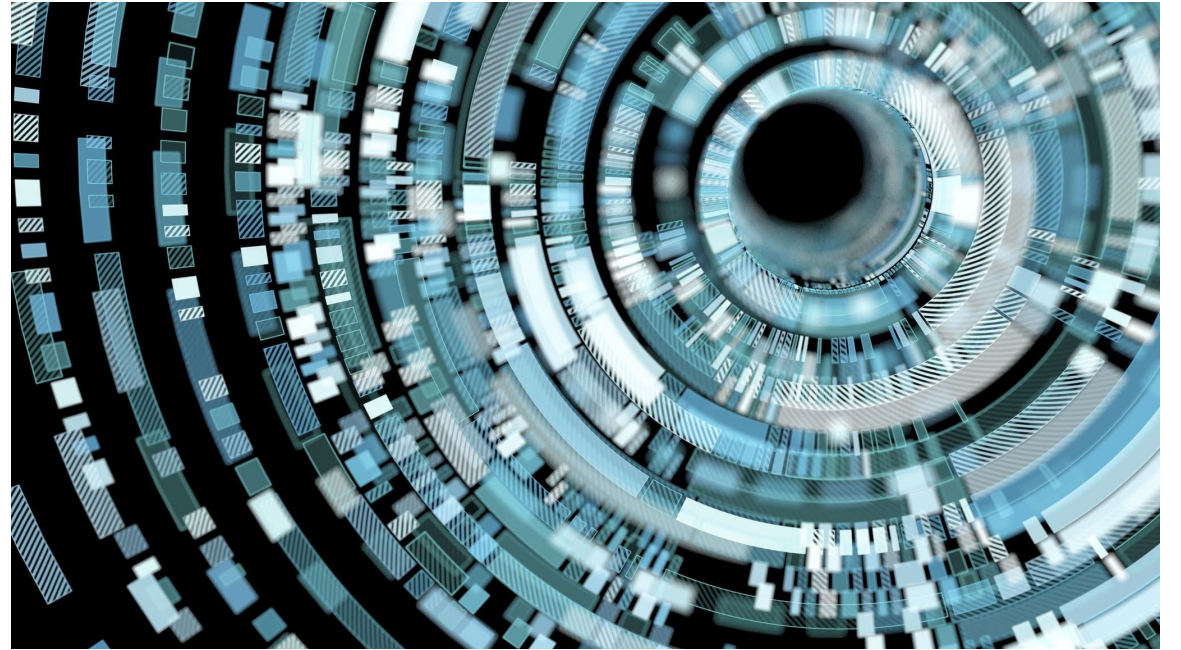
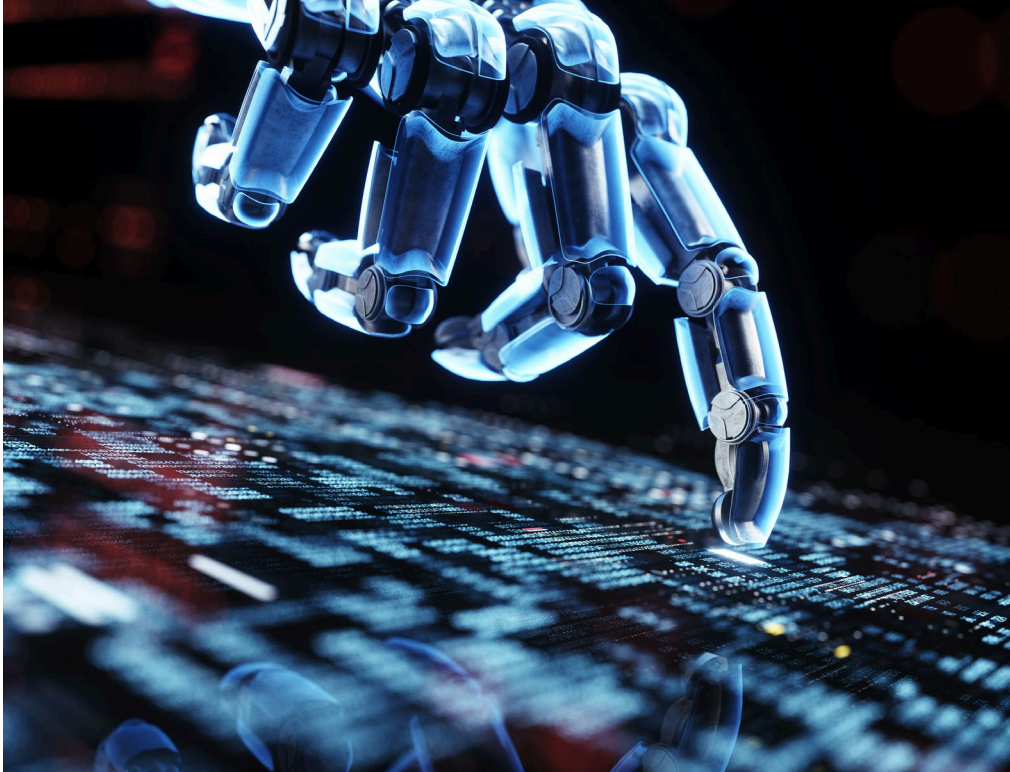
Bicycles, electric and cargo bicycles



Electric vehicles



Further innovations



Last mile
delivery
innovations



Thank you