

Kaiqiang Zheng 400175602 & Yujiong Chen 400267378

Project Title:

Future Last mile Delivery

City Challenge you try to address:

1. Delivery delay
2. Package damaged
3. Limited time
4. Traffic congestion
5. Safety issues

Motivation behind the project:

- Efficiency in Last Mile Delivery: In many cases, the supply chain's final mile delivery is the most costly and time-consuming link. Solutions for autonomous mobility can streamline this procedure by cutting expenses, delivery times, and transportation's negative environmental effects.
- Traffic Congestion: As e-commerce and delivery services have grown, urban regions are experiencing an increase in traffic congestion.
- Environmental Sustainability: Reducing last-mile delivery's carbon footprint is critical to the fight against climate change. A cleaner, more sustainable city can be achieved by designing autonomous electric vehicles that use less energy and produce fewer greenhouse emissions.
- Safety: The number of accidents brought on by human error may be decreased by autonomous cars.

- Autonomous package delivery methods: With development of autonomous driving technology and machine learning algorithms, autonomous driving vehicles and drones could be one of the solutions to the urban last delivery issues.
- Smart city solutions: Possible implementation of city IoT sensors, using algorithms to generate best delivery approaches (time, route, vehicle, package drop-off locations).

Potential outcome and benefits to the City:

- Reduced Traffic Congestion: By optimizing routes and timetables, autonomous last-mile delivery systems can help cities experience less traffic jams. Residents commute more quickly as a result, and the infrastructure experiences less wear and tear.
- Lower Emissions: The initiative can assist in lowering greenhouse gas emissions and air pollution by utilizing electric and driverless vehicles.
- Enhanced Efficiency: Autonomous delivery vehicles can operate 24/7, improving delivery efficiency and reducing waiting times for customers.
- Improved Safety: Autonomous vehicles are equipped with advanced safety features, reducing the risk of accidents caused by human error.