



Project proposal

Group member:

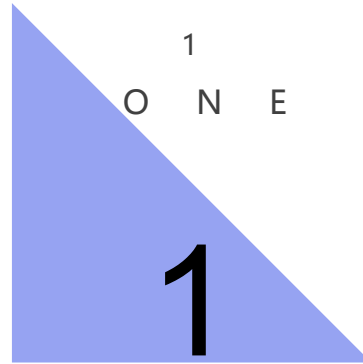
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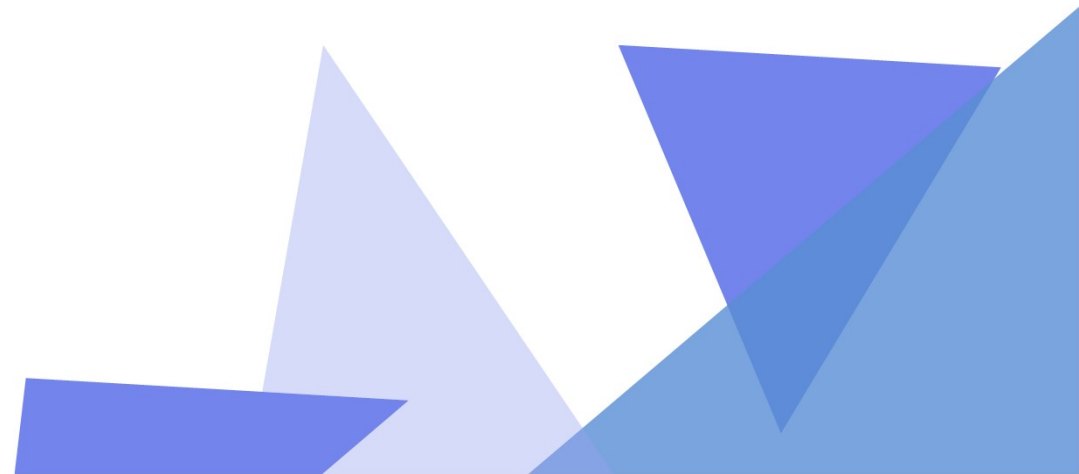
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Interaction between Intelligent device



Initial scheme





Scheme1 Following system

Car 1:

Mode 1: driven by human

Mode 2: self-driving

Car 2:

No sensor, Interaction with Car 1 (get the environment information from Car 1)

Navigated by car 1

Information share system

Dynamic system (dynamic obstacle)

Path planning optimization algorithm



Scheme 2 Taxi system

Car 1 ,Car2 navigation along a oval route.

A biped robot located within oval,and randomly send taxi demand instructions to cars.

Nearest car will pick it up,the other car still navigation.

When the robot want to get off the car,the car will stop and drop the robot.

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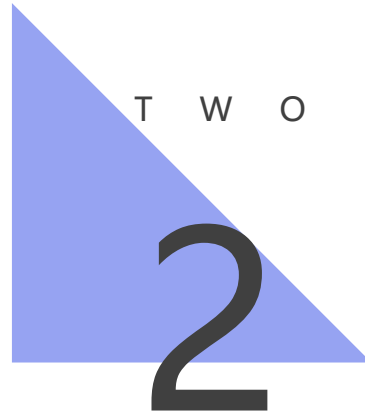
Scheme 3 Intelligent human-vehicle system

- **Description:** The goal of this project is:

1. Build a biped robot, which can achieve both bipedal walking and somersault.
2. Build a intelligent car, which can cooperate with the robot to conduct some tasks.
3. Include two modes: Remote control mode and automatic execution mode.
 - Remote control mode includes: Bluetooth based and Internet based.

- **Reference to Prior Work:**

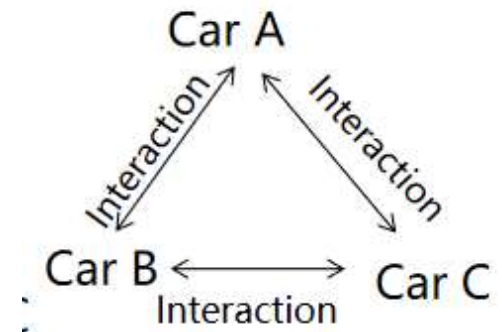
1. Gait planning
 2. Internet penetration
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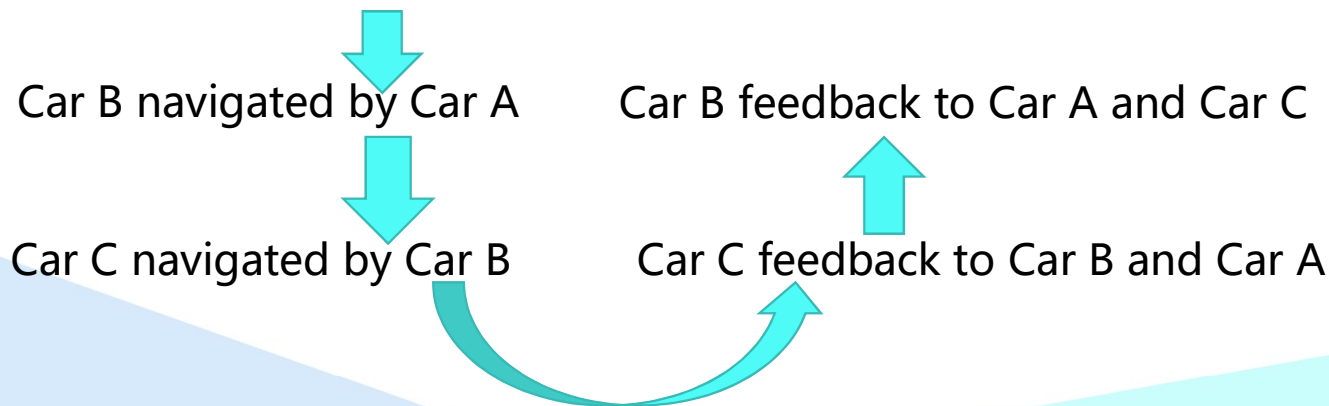
Final Scheme: Multiple Interaction System

Multiple Interaction System

- **Components:** Three cars(Car A,Car B)
 - **Core technology:**interaction between three cars
 - Car A have sensors,Car B and Car C have **no sensor**
- Build a multiple interaction system for **group control**



Car A self-drive and detect the environment



Three cars can maintain a certain formation and can change the formation

Multiple Interaction System

Communication protocol



WiFi broadcast



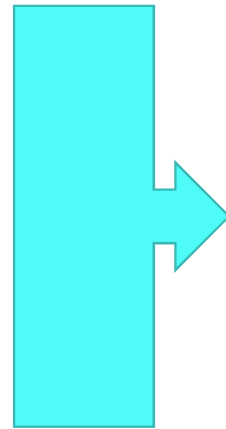
Bluetooth



ZigBee



UWB



wireless communication



Material list

3 Cars

(frame,motors,servo,MCU)

Sensors: Camera,Gray scale sensor

Communication module

Decorative geometric shapes at the bottom of the slide, consisting of overlapping triangles in light blue and cyan colors.