

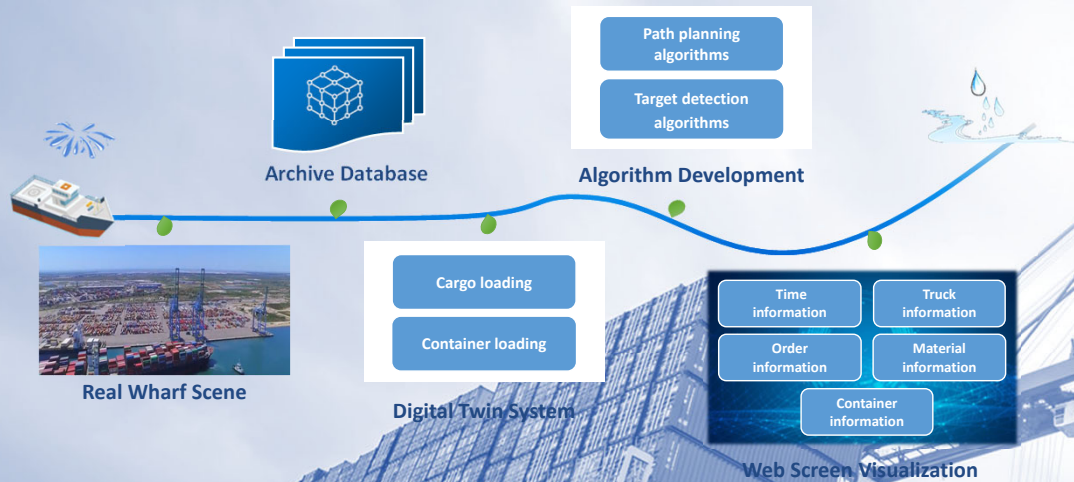


Smart Image of Port Transport

Introduction

With the rapid development of manufacturing and logistics industries, the demand for efficient and intelligent logistics solutions is growing. Efficiency issues in container transportation are increasingly evident, such as the lack of real-time equipment monitoring, absence of failure alerts, and operational errors. The digital twin system uses algorithms such as truck detection, shortest planning to build wharf in UC-win/Road software and import rich models to twin container loading status in real scenarios, and monitor the operating status, performance and operating parameters through a visual screen.

System Architecture



Innovation

Digital twin system

- Improve loading / unloading efficiency
- Reduce management costs
- Avoid manual operation errors

Transport process monitoring

- Transport path optimization
- Truck real-time monitoring
- Supply chain transparency enhancement



Operation

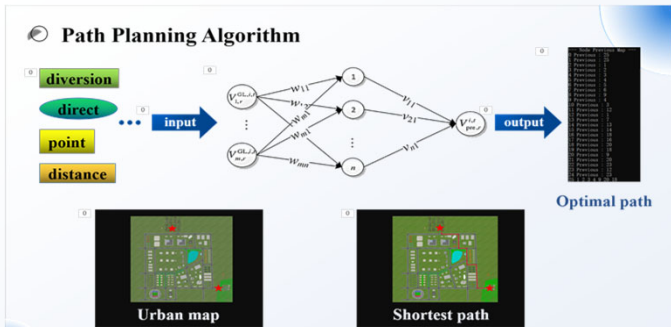
- Step1: Twinning a video of a real scene.
- Step2: Different algorithms are used to plan shortest path and detect truck.
- Step3: The cargos and containers information is displayed on the large screen.

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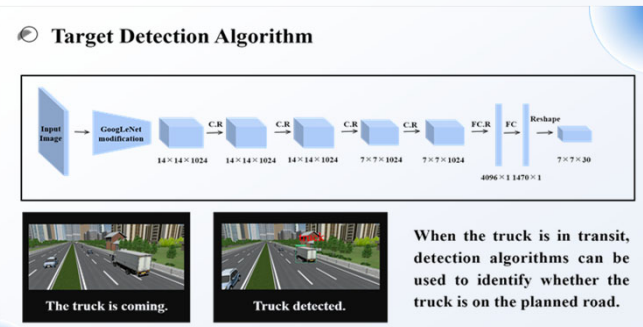
ID	Truck Number	Destination	Time	Trailer Number	Untrailer Number	Trucking Info	Start Number
1	Truck_001	wharf_1	2024-09-02 10:00:00	100	20	COB0001021	Blot_001
2	Truck_002	wharf_2	2024-09-02 12:00:00	102	20	CMAU1234567	Blot_002
3	Truck_003	wharf_3	2024-09-02 14:00:00	120	25	MADU1654321	Blot_003
4	Truck_004	wharf_4	2024-09-02 16:00:00	130	15	HLCU8765432	Blot_004
5	Truck_005	wharf_2	2024-09-02 18:00:00	110	10	POHU567894	Blot_005
6	Truck_006	wharf_3	2024-09-02 11:00:00	80	40	TSHU2345678	Blot_006
7	Truck_007	wharf_1	2024-09-02 13:00:00	180	10	ZHU1456789	Blot_007
8	Truck_008	wharf_2	2024-09-02 15:00:00	70	60	SHOU9876543	Blot_008
9	Truck_009	wharf_1	2024-09-02 16:00:00	100	50	HSCU345678	Blot_009

Future

We will provide the optimal route based on real-time road conditions.



We will improve the speed and accuracy of the algorithm.



Automation and intelligence:

we will use deep learning technology to achieve automatic identification and classification of goods, greatly improving the efficiency of cargo handling.

Equipment monitoring and fault prevention:

Through real-time monitoring and intelligent diagnosis technology, we will manage the port machinery and equipment throughout the life cycle to ensure the safety and efficiency of port operations.