

Distributed Edge Computing for Autonomous Driving

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Novos Media e Sistemas Ubíquos
 New Media and Pervasive Systems

Motivation

•Internet 4.0, envisions scenarios where rapid analysis of a large set of diverse data is of fundamental importance:

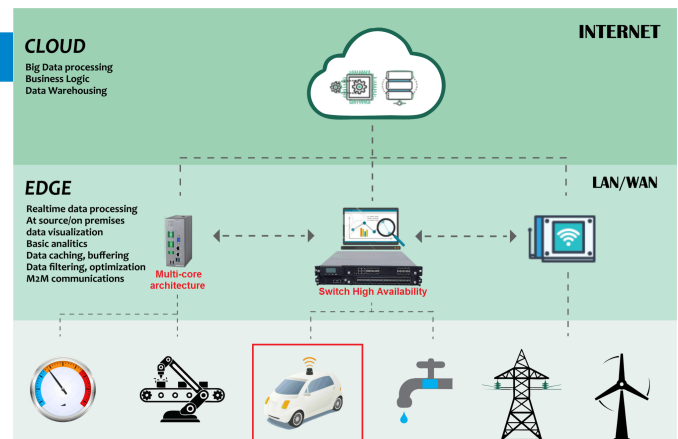
- ▷ Industrial IoT
eg. critical systems, automation
- ▷ Intelligent transport systems
eg. adaptive direction, autonomous driving
- ▷ Real-time video processing and distribution
eg. smart camera networks.

•Sustainable and scalable distributed computing system.

•Services to manage networks, systems and applications for smart cities.

Objectives

- Services for supporting Cloud-based applications.
- Automated management and orchestration of multiple interacting intelligent agents/micro-services (Distributes computing).
- Reduce computational cost: control, storage, and data analysis



Cloud and Edge Computing

Distributed Edge Computing for Autonomous Driving

System is a complex combinations of various components:

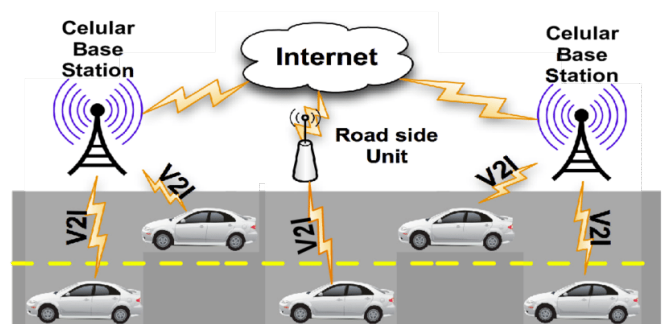
- Perception
- Decision making

Operation of the automobile are performed by **electronics** and **machinery** instead of a human driver

Challenges

Identify methods of coordinating traffic information between vehicles and infrastructures based on Edge computing to perform the macroscopic traffic management.

- Autonomous intersection management.
- Vehicle to infrastructure communication.
- Infrastructure to infrastructure communication.
- Traffic model.



Vehicle-to-Infrastructure (V2I) communication

Status

- NEMPS Phd Program
- Research group SITI – COPELABS.



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