# Technology Strategies for Next-gen Vehicles
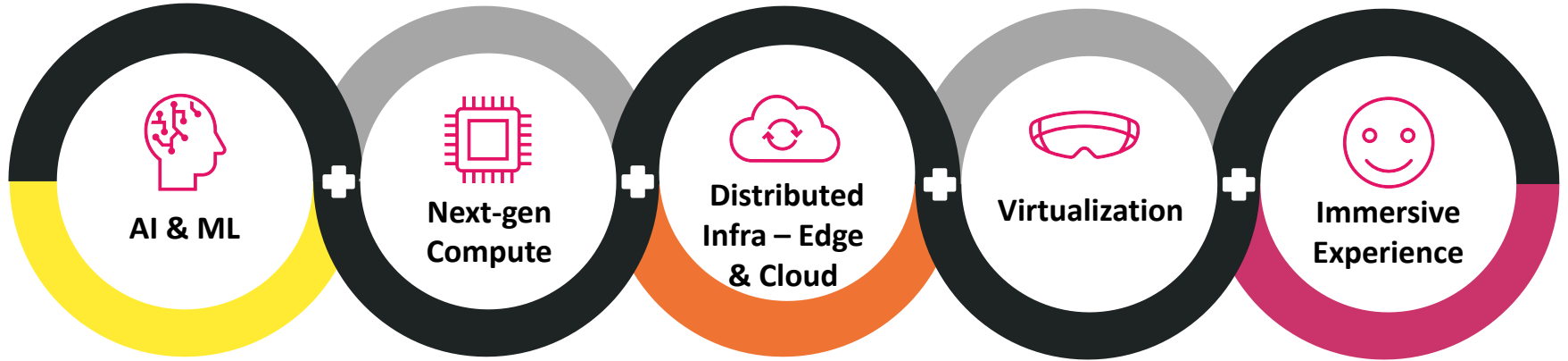
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# Top Technology Trends



AI & ML

Next-gen Compute

Distributed Infra – Edge & Cloud

Virtualization

Immersive Experience

Fourth industrial revolution accelerated 10x by technological advancement

# Artificial Intelligence & Machine Learning

**Autonomous Driving Control**

**Accelerated Software Development**

**Annotation & Labeling**

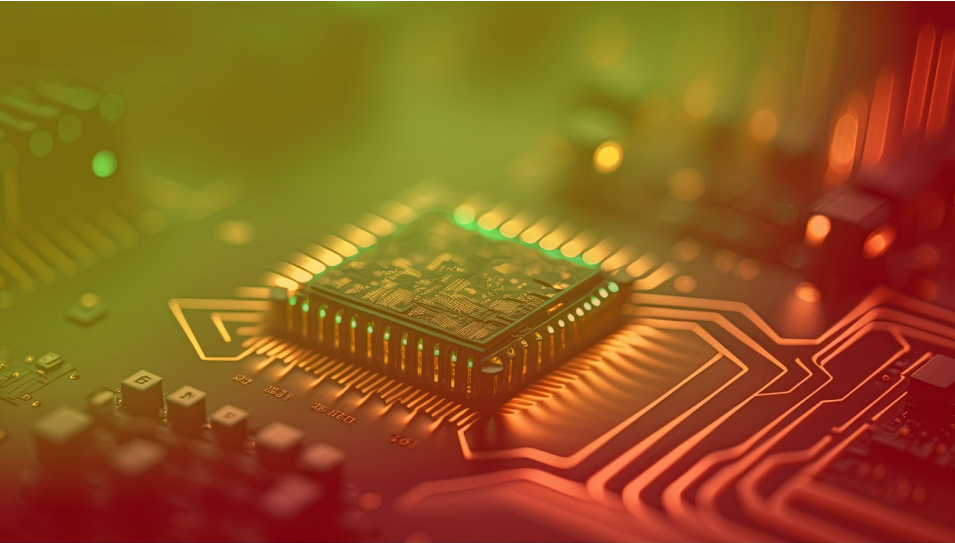**In-Car Virtual Assistant**

**AI Use Cases**

**Predictive Maintenance**

and many more…

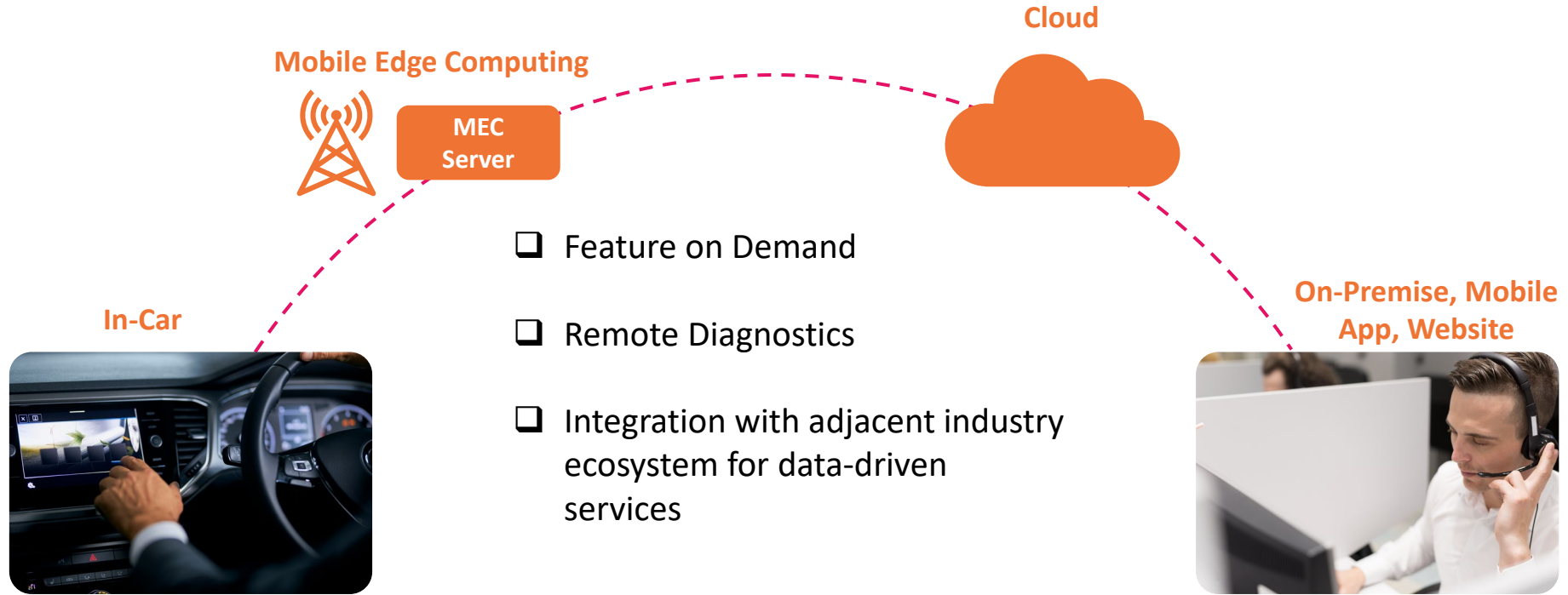Good quality & diverse quantity of data is the key for successful AI integration

# Next-gen Compute



- ❑ High compute processors to accelerate and accommodate
  - • Graphics Processing
  - • Multi-core processing
  - • Tensor core Neural engine
- ❑ Minimum power consumption and cost are critical parameters
- ❑ Seamless integration between Onboard and Offboard compute

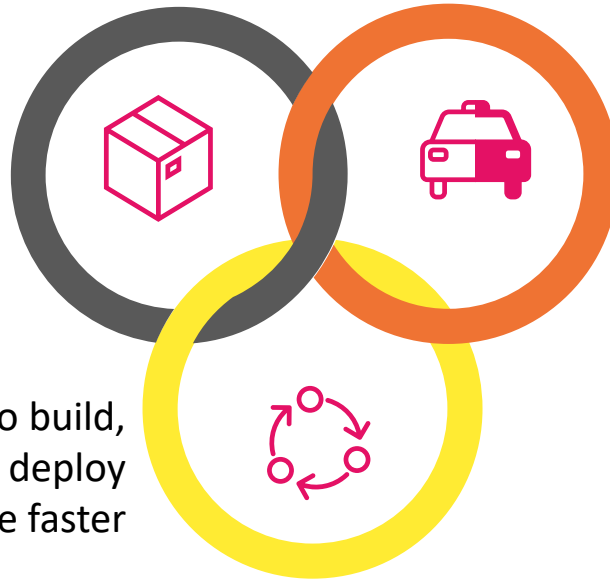Effective utilization of GPU via accelerated processing is crucial

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# Distributed Infrastructure – Edge & Cloud

**Cloud**

**Mobile Edge Computing**

MEC
Server

**In-Car**

**On-Premise, Mobile App, Website**

❏ Feature on Demand

❏ Remote Diagnostics

❏ Integration with adjacent industry ecosystem for data-driven services

Dynamic allocation of features between In-Vehicle & Cloud

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# Virtualization

**Containerization** enables encapsulating software & its dependencies into isolated containers, facilitating easier deployment, scalability, and management of applications.

**Virtualization** enables virtual representations to mimic real-world vehicle behavior to perform validation earlier in the development cycle, improving efficiency & reducing costs.

**CI/CD** pipeline will help to build, validate, containerize and deploy software on vehicle faster

## Shift left for accelerating development process

# What Next?

**Car Manufacturers**
- Apply Ecosystem approach to partnership
- Focus on user experience features

**Component Suppliers**
Software as a product

**Semi conductors**
- Deliver future-proof automotive grade SoCs
- SDK for accelerated deployment

**Cloud Service Providers**
IoT Services, Connected Platform

**Cross industry Ecosystem Players**
Containerized features/apps

**Tool Providers**
- Development Environment for next-gen tech
- Common tooling environment & workflow

**Engineering Service Providers**
Accelerate the deployment of advance technologies

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Thank you