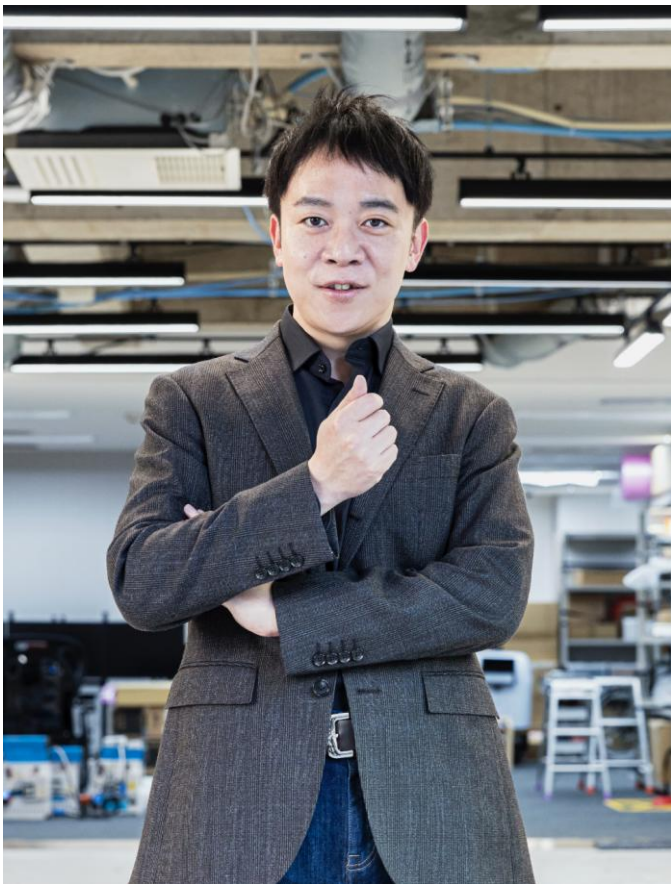


# AI使能自动驾驶

加藤真平

Autaware基金会理事长





## 加藤真平

国际知名计算机科学专家，自动驾驶技术开源软件演进先驱

**2023年至今：** 提雅智行 (TIER IV) CEO；东京大学特聘教授

**2018年至今：** Autoware基金会理事长

**2016至2023年：** 东京大学计算机科学全职副教授

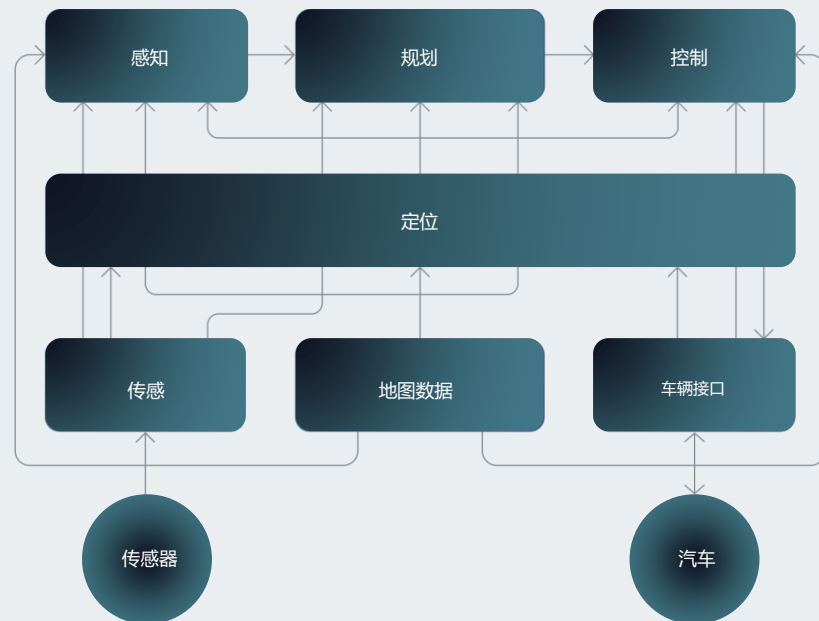
**2012至2016年：** 名古屋大学信息科学全职副教授

**2009至2012年：** 卡耐基梅隆大学和加州大学圣克鲁斯分校博士后研究员

**2008年：** 获得庆应大学工程博士学位

**1982年：** 出生

# 自动驾驶



# 开源与商业战略

山顶



第9站

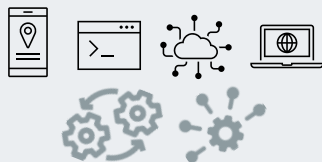


第5站



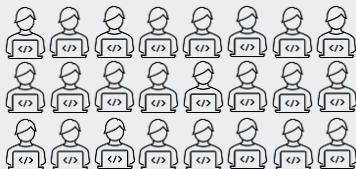
**客户**

提雅智行提供解决方案



**产品**

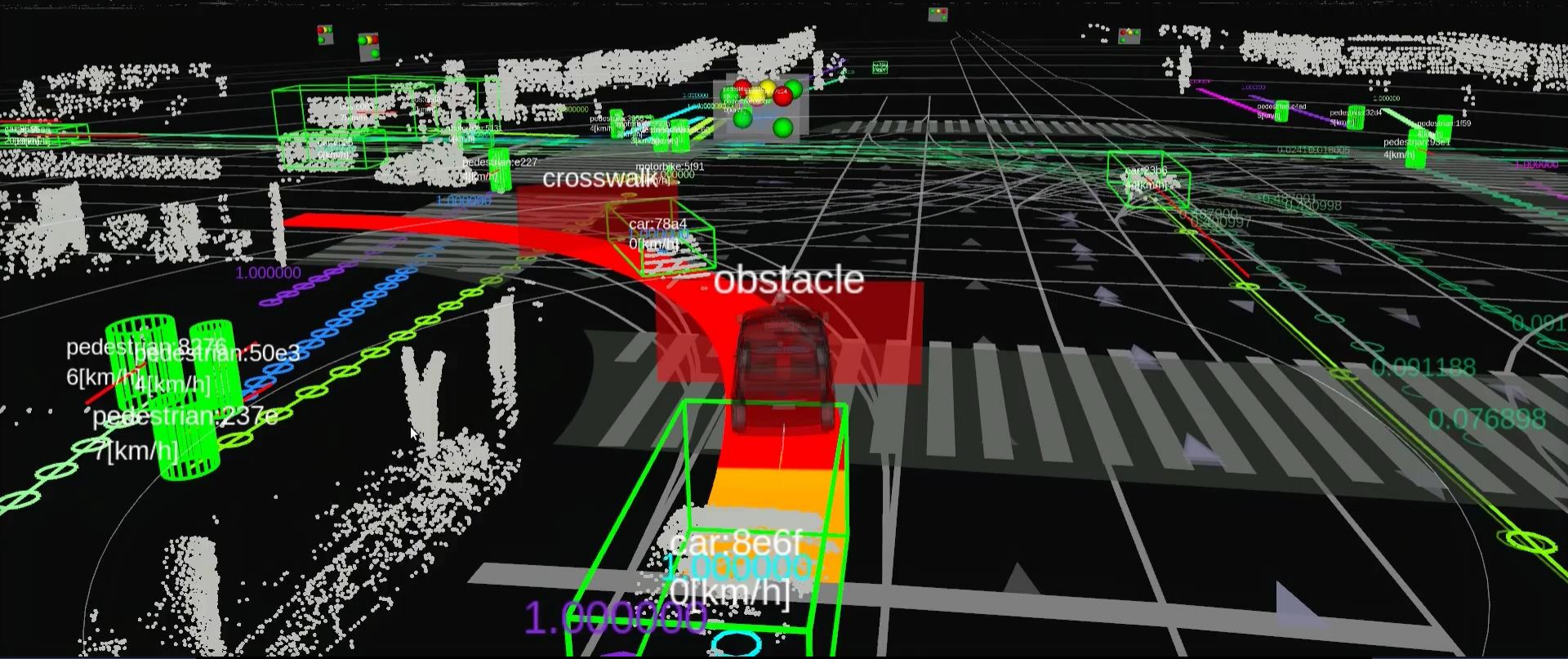
提雅智行开发平台



**开源**

提雅智行领衔Autware基金会





CROSSWALK

obstacle

pedestrian:8376  
6[km/h]  
pedestrian:237e  
7[km/h]

car:8e6f  
0[km/h]

car:78a4  
0[km/h]

1.000000

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0.670997

0.470991

0.24165018005

0.001

1.000000

pedestrian:1159

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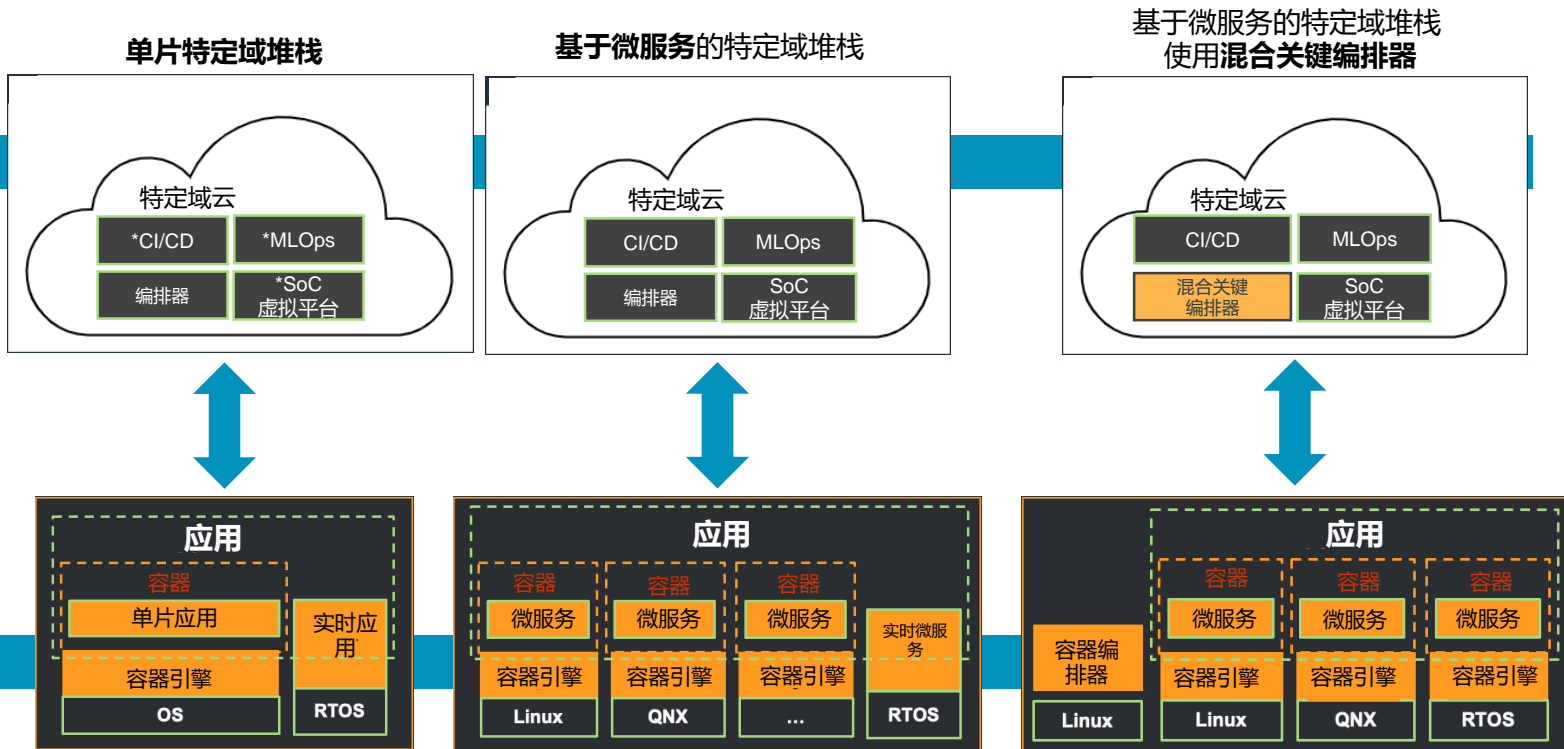
pedestrian:3244

# 软件定义车辆平台

## 云边架构

云原生开发

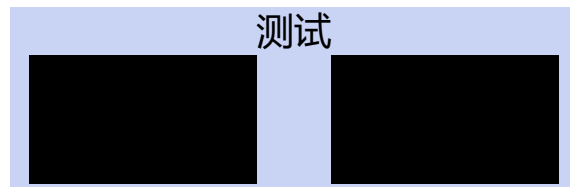
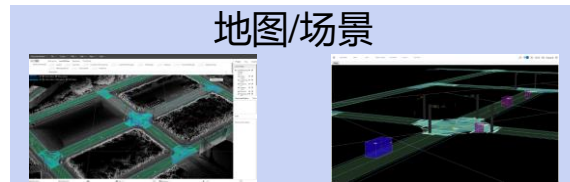
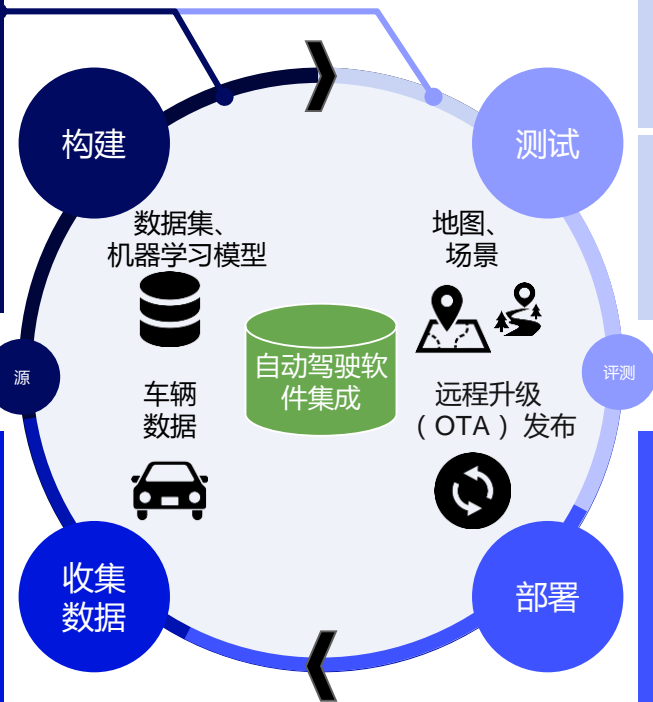
- DevOps / MLOps
- 持续部署
- 微服务
- 校验容器
- 环境校验



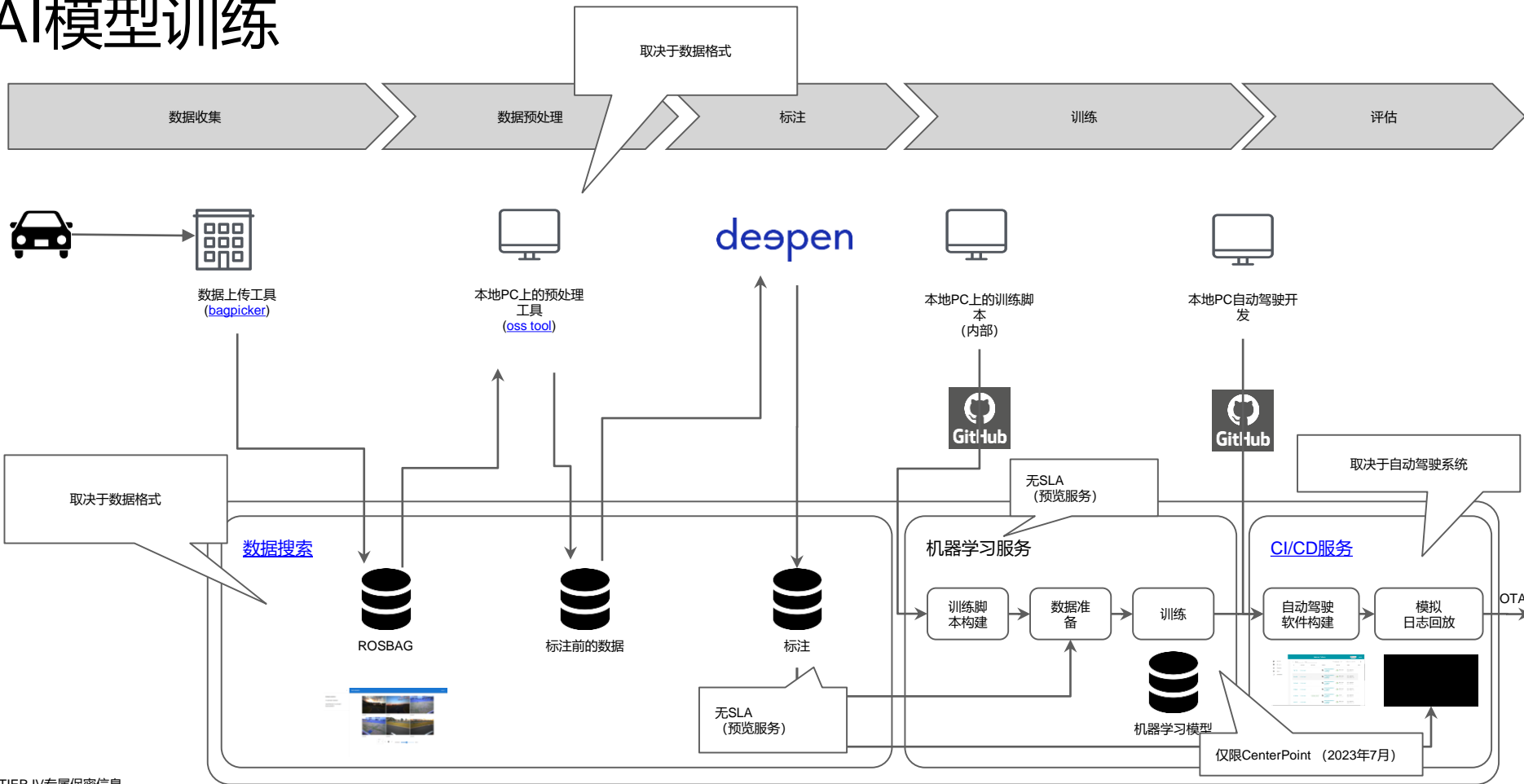
CI/CD: 持续集成、持续部署;  
MLOps: 机器学习运营; SoC: 片上系统

# DevOps框架

## 持续集成/持续部署(CI/CD)评估



# AI模型训练



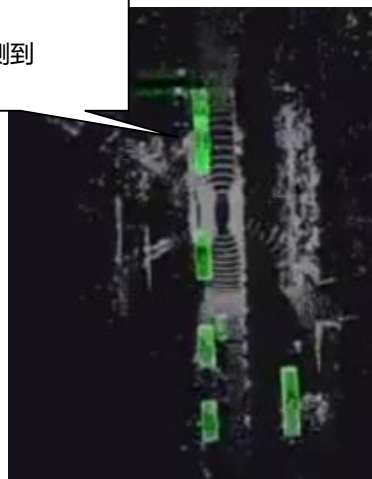
# 域适配的挑战

未探测到...

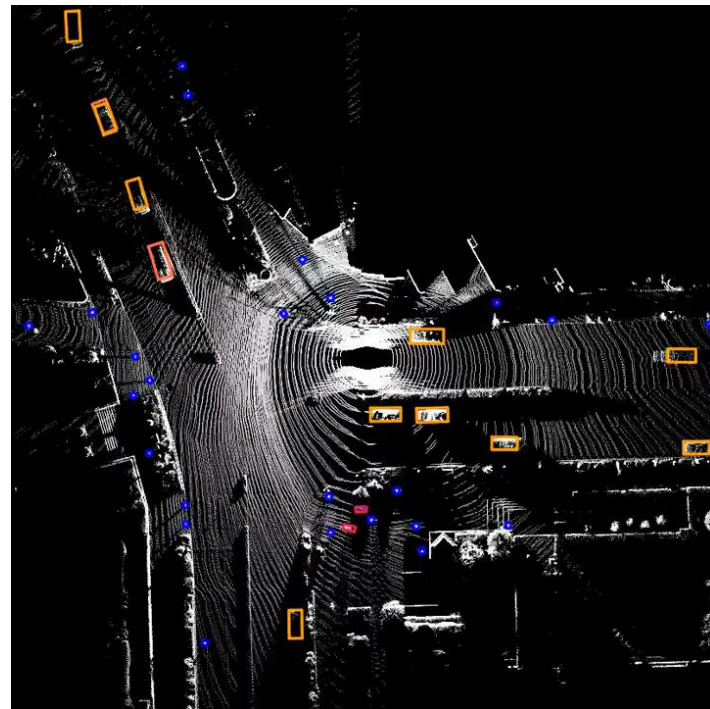


无域适配

探测到



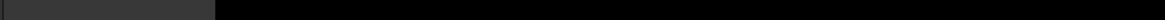
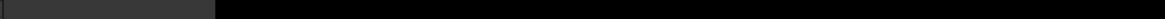
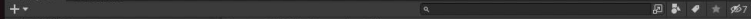
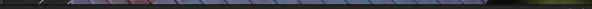
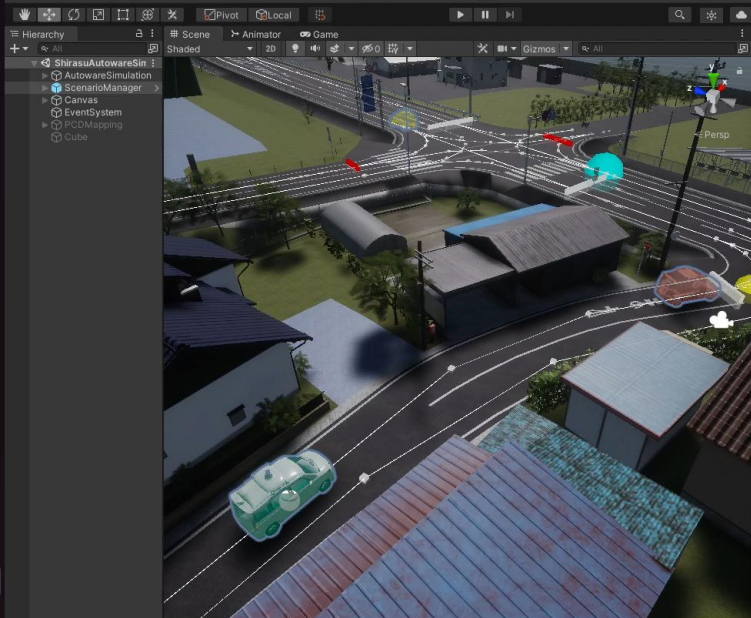
有域适配





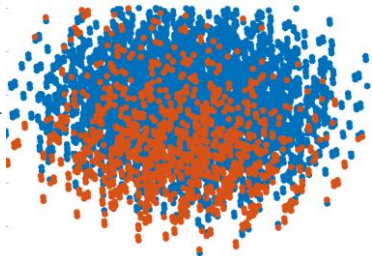


# Synthetic Data Generation with

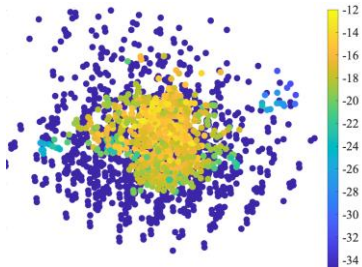




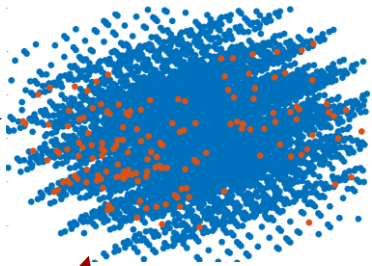
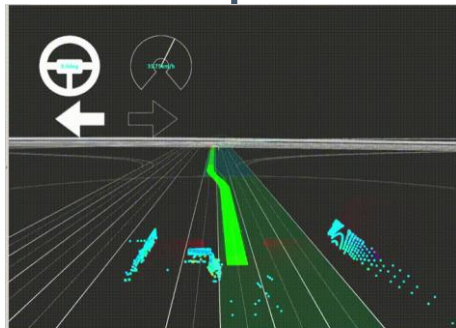
故障低维表示



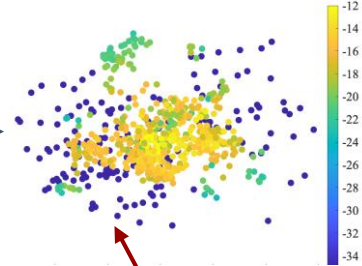
通过对数似然函数确定优先级/分类



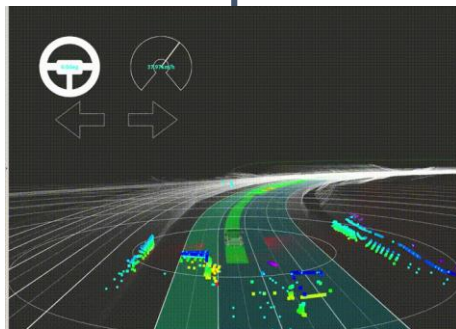
工程师修复高危漏洞



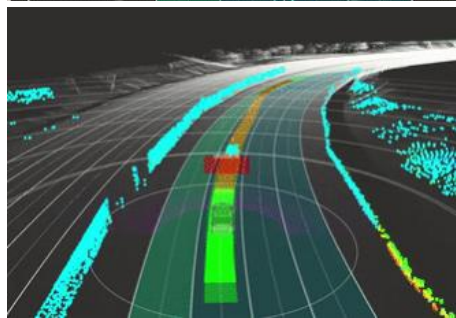
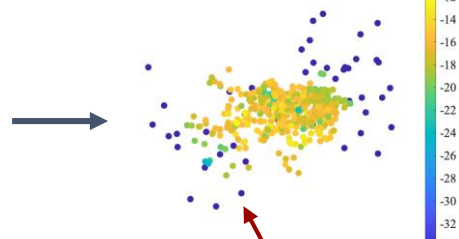
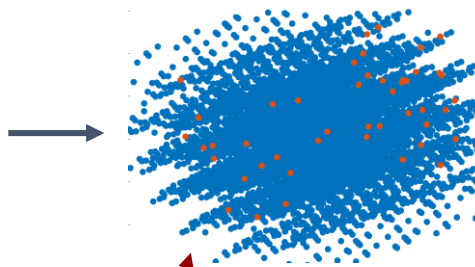
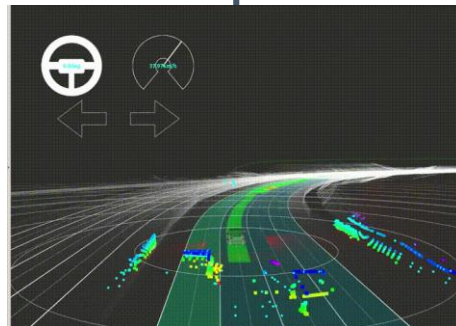
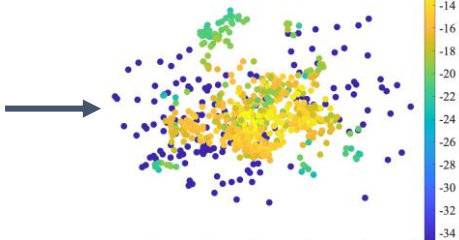
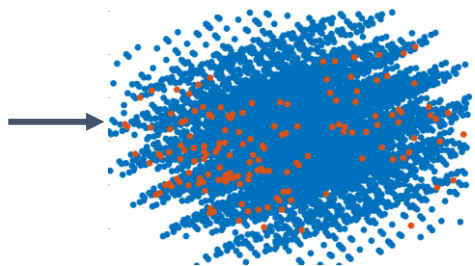
2.5%的网格搜索测试集以失败告终。



在这种情况下，算法崩溃的概率为5%，变道成功率为60%。



⋮



0.52%的网格搜索测试集以失败告终。

在这种情况下，算法崩溃的概率为2.7%，变道成功率为60.1%。

# L4运营许可获取流程

## L4组织认证

- 运营计划
- 条款遵从
- 操作人员培训

①运营计划提交

③审批

对违法行为进行行政处分

## L4操作人员认证

- 状态监控
- 当出现事故时
  - 向警局/消防局报案
  - 将人员派往事故现场提供支持

远程监控（或车辆中的安全操作人员）



## PPSC\*



②听证

## 当地政府



市长



运营设计域 (ODD)

\*都道府县公安委员 (PPSC) : 县公共安全专员



# TIER IV

THE ART OF  
OPEN SOURCE,  
REIMAGINE  
INTELLIGENT  
VEHICLES.

THANKS !