

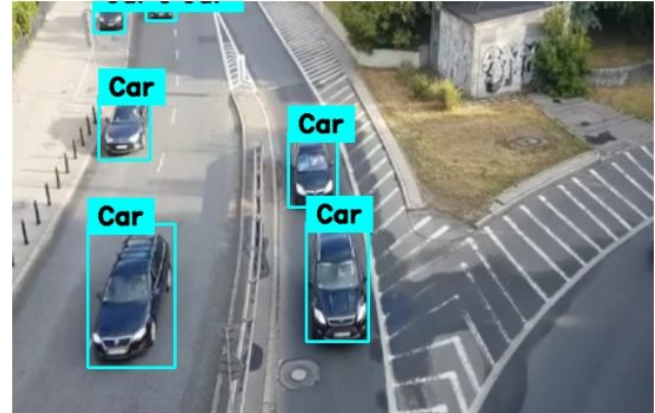
Software Defined Camera on i.MX93

Comparing CPU and NPU-based implementations



The Software Defined Camera Project

“The goal of SDC is to provide a demo-able software stack that allows for the deployment of Smart Camera / Vision use cases. Those essentially involve image capture via a camera and AI processing. A typical use case is object recognition. The architecture of the project allows flexible deployments with workloads running on the edge or in the cloud. This is accomplished via containers.”



The Demo

- Linaro's Software Defined Camera project
 - A hardware and software stack that allows for the deployment of Smart Camera / Vision use cases
 - System-Ready IR Certified hardware platform
 - System-Ready compatible Linux distribution (Linaro Trusted Reference Stack)
 - Reference Cloud-Native application running containerized microservices
- This particular demonstration uses two i.MX93 EVK boards running NXP firmware (U-Boot bootloader) and the Linaro TRS Linux distribution
- Use case is traffic monitoring
 - The software stack is fed a recorded video stream of road traffic
 - It detects and counts cars, busses, trucks, bicycles, pedestrians
 - A web-based GUI displays the video and statistics
 - Cloud integration (AWS Greengrass deployment, AWS cloud monitoring) is NOT demonstrated
- One board runs inference on the CPU, the other one benefits from NPU acceleration (the i.MX93 SoC has an Arm Ethos-U65 IP)



Thank you

