<Smart Helmet> <Numactl>

Team Name : Dream Hack

Team Members : 4

Problem Statement

Object detection and pothole detection for aitonomous vehicles

Architecture – Impact of oneAPI/SYCL (How oneAPI /SYCL helped you?)

1. The oneAPI /SYCL helped us the execution time. without using the oneAPI our app was not able to execute easily.
2. It helped us by increasing the execution time 20ms faster. its execution time increased after using intel-oneAPI.
3. It helped us in figuring out per frame image processing GPU accelaration . it enhanced its accelaration and made it efficient.

Core components of oneAPI/SYCL used in the project

- Non Uniform Memory Access
- Multiprocessing'
- GPU accelaration

Demo Video/Live Demo

Please elaborate oneAPI/SYCL usage

links:https://youtu.be/Kj6hxT09CPg

https://medium.com/@mansibansal7467/project-smart-helmet-9a3e7fed7900

GitHub Link (Codes should be public and available after hackathon also)

https://github.com/mansi12340/object_detection_for_autonomous_vehicles_oneAPI

Results Summary (focus on unique aspects of oneAPI/SYCL that you have used)

- The hardware project being complicated was also not having good execution time. By using the oneAPI the execution time was 20ms faster.
- GPU accelaration helped in better execution and also even made our project work smooth.
- pot hole detection and object detection was possible due to Non Uniform Memory Access.

THANK YOU