CS324 Project: Demo AI on Chips

Introduction

In this project, we aim to implement and demonstrate real-time AI algorithms on the Jetson Nano platform by NVIDIA. The device serves as a platform for AI at the Edge, where the response time for single tasks should be within nanoseconds to milliseconds but not exceed 5 seconds.

Project Topics

Participants can choose from the following topics or propose their own computer vision task or interactive projects with confirmation from the teaching assistant:

- Emotional face-guided face generation based on Style-GAN.
- Pose Estimation.
- Object Detection.
- Behavior Recognition.
- Face Recognition.
- Semantic Segmentation.

Group Formation

Students are required to form groups of 3 or 4 people. Group information must be submitted via the following link: [Tencent document]CS324GroupInfo `https://docs.qq.com/sheet/DTENnUkN1S2x5UGVl`.

Defense and Presentation

A defense will take place before the final exam, where each group must present their project completion process and provide a real-time demonstration. The presentation should detail the work and contribution ratio of each member, which will serve as a scoring basis.

The breakdown of the presentation score is as follows:

- Presentation and real-time demonstration (70%)
- Report (20%)
- Code Re-implementation (10%)

Submission Instructions

Submissions should include:

- A written report in PDF format describing the methods, results, and analysis.
- Presentation file (PPT).
- Code for producing all results.
- Instructions on how to run the code, preferably in a Jupyter notebook.

The submission file should be named `GroupID_jetson.zip`, where `GroupID` is replaced with your group number. Only the group leader needs to submit the archive through Blackboard.

Deadline

The deadline for submitting all project materials is December 29th, 2024, at 23:30 Beijing Time. Presentations will be held in the 16th week.