**Parameter Reduction in CNNs: The Role of Grouped Pointwise Convolution**

**Project Setup:**

To execute the given python jupyter notebook, few software’s are required, and the details are furnished in the below table along with the link to download and setup.

Project File: <https://github.com/itsaravindanand/CECS551_Project_GPCNN.git>

GPC-API: <https://github.com/itsaravindanand/gpc-api.git>

**List of software/packages required and the respective versions:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Software/Package** | **Version** | **Links** | **Description** |
| Anaconda Navigator | 2.5.1 | [Anaconda](https://docs.anaconda.com/free/navigator/index.html) | Used to create Runnable Environment |
| Python | 3.9.18 | Install while creating the environment | Selected programming language to execute the project |
| Tensorflow | 2.10.1 | Install from Conda | Library with inbuilt packages to handle tensor values |
| Cuda | 11.2.0 | Install from Conda | Required to connect to NVIDIA GPU |
| Cudnn | 8.1.0 | Install from Conda | Required to connect to NVIDIA GPU |
| Cuda Toolkit | 12.3 | [Cuda](https://developer.nvidia.com/cuda-downloads) | Required to connect to NVIDIA GPU |
| Cudnn Dependency Files | NA | [Cudnn](https://developer.nvidia.com/cudnn) | Required to connect to NVIDIA GPU |
| git | NA | Install from Conda | Required to clone the dependency files |
| Jupyter Notebook | NA | Install from Conda | Required to execute the dependency files and evaluate the results |

***Note:***

* *A step wise guide for installing anaconda navigator and tensorflow can be found in this* [*link*](https://www.tensorflow.org/install/pip#windows-native_1)*.*
* *The links specified are subject to update.*
* *The python notebook was executed with the software/packages with specification mentioned above. When the files are executed in another setup, a slight difference in the accuracy values is expected.*
* *The execution time differs based on the hardware setup used. The current outputs in the python notebook were executed with a batch size of 16 and with GPUs RTX 3060 and 3090.*