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**Introduction**

This repository contains the models described in the paper “Modeling and Optimization of SRAM-based In-Memory Computing Hardware Design”. The work studies in-depth the effect of the parameters of a capacitive IMC SRAM design on network-level accuracy.

**Citation**

To be added.

**How to run**

Each of the model directories, include a subfolder ‘./models/’. The convolution and Fully connected layer with the bit-by-bit IMC implementation are described in this subfolder. The model layers description is listed in the same directory.

Run the code by running the shell script, ‘evaluate.sh’ added to each model. Default arguments are added and can be changed to user input.

**Models**

Modeled Resnet18 network for datasets CIFAR-10 and ImageNet. Corresponding Baseline accuracies are listed below.

|  |  |  |
| --- | --- | --- |
| *Model Activation/Weight Precision* | *CIFAR-10* | *ImageNet* |
| *1-bit* | *88.98* | *-* |
| *2-bit* | *90.52* | *62.83* |
| *4-bit* | *91.47* | *69.16* |