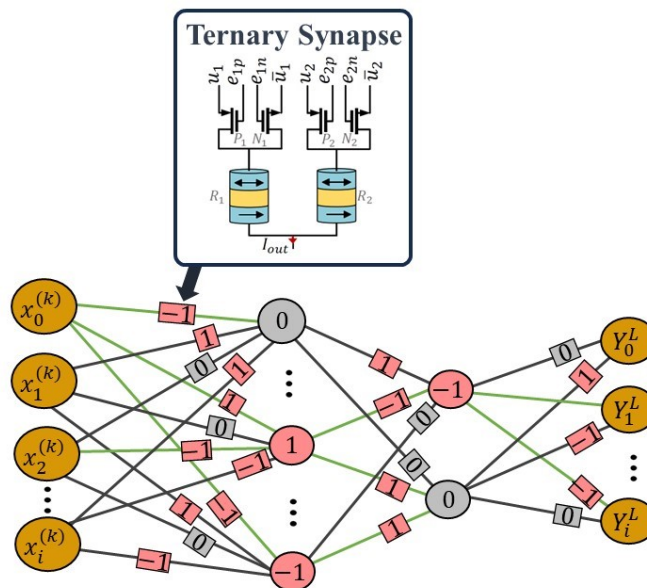


In-Memory Training Of Ternary NN (TNN)

Recently, several different memristive technologies (ReRAM, CBRAM, PCM and STT-MRAM) have emerged as promising candidates for digital and analog in-memory computation.

Deep neural networks (DNNs) are one of the main applications to benefit from analog in-memory computation.

In this project you will simulate in-memory training of ternary neural networks (TNNs) with a magnetic tunnel junction (MTJ) device.



Project Goals:

In this project, you will use the measurement of a MTJ device to simulate in-memory training of TNNs.

The students will:

- Learn about emerging memory technologies and processing in memory of DNNs
- Gain practical experience with implementing and training TNNs

Prerequisites:

- **Courses:** Machine Learning
- **Programming:** Python

Recommended:

- **Courses:** Introduction to VLSI
- **Programming:** Pytorch

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