Accelerators for Machine Learning

Number of students: 1 to 4
Estimated period of project: 2 Semesters (EE and CE)

Description:
The goal of this project is to design an application specific integrated circuit (ASIC), carefully designed for running Deep Learning (DL), and Machine Leaning (ML) algorithms. In the context of this project, we analyze some conventional deep learning systems, and will design some circuits that can improve speed and power-efficiency of such systems.

Students involved in this project will learn about deep learning and machine learning, as well as circuit design techniques. In addition to high-level modeling of machine learning systems, the goal is to design circuits and prepare their layouts. This set of skillset will be very helpful for students to pursue their future career in the filed of engineering. Also, one of the main aspects of this project is to encourage students to work as part of a bigger team, collaborate, learn, and move forward faster.

Background: Students with a good background on machine learning and circuits are encourage to apply. Also, students need to be self motivated, active, and eager to learn. Good knowledge on relevant Software Tools (e.g. Matlab, Python, SPICE) is a plus.

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