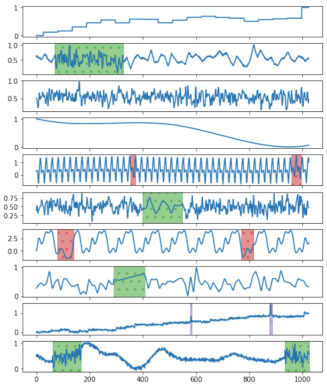
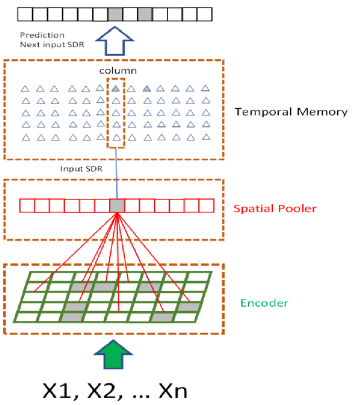
מעבדה לאבטחת חומרה

Software Package for HTM based accelerator

Real-time systems have a critical role in many domains such as medical monitoring, flight, autonomous vehicles, weapon systems, and Industrial Control Systems (ICSs). Malfunction of the device or cyber-attacks on such a system can be potentially devastating. Detecting anomalies in such systems in general and doing it in real-time is very challenging.





Recently, we developed a new anomaly detection algorithm based on a new concept called HTM. To improve the efficiency of the HTM algorithm, we extend RISCV processors with a few accelerators.

The purpose of this project is to write an efficient algorithm that could use the proposed accelerators to implement this real time based application

prerequisites

- A basic knowledge in machine learning.
- Knowledge in real-time systems is plus
- Good programming skills in C or C++

Expected results

- 1st past – understanding the algorithm and the accelerator
- 2nd part – implementation of the algorithm

The project can be extended to another semester if the student/team decides to develop the algorithm further

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