**TERM PAPER – PROGRESS REPORT**

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Project/Paper Title**: A study of Spiking Neural Network Architecture:**

**Abstract:**

Communication in the human brain is done by sending small “packets” of data through complex paths to various destinations, whereas in many conventional computers the communication is based on point to point communication. This led to the inefficiency in the high-speed data transfer in many of the super computers.

Spiking Neural Network Architecture(SpiNNaker) is a parallel, neuromorphic supercomputer architecture which simulates a human brain. This architecture was developed by the University of Manchester. SpiNNaker was generally for high speed computing operations. The SpiNNaker architecture has 65,536 identical 18 core processors of ARM 968 130 mm process, which in total is 1,179,648 cores. Each neuron in this architecture has a link to 6 neighbours (toroidal network)

The SpiNNaker has more than one million cores which is only 1% of the number of neurons in a human brain. Each core in this architecture is programmable and can hold 32KB instruction memory. Diverse types of neural networks can be tested and implemented on this architecture. Signalling chips installed in this architecture are digital. The only limitation in the number of neurons to be added in this architecture are budget and does not depend on any of the fundamental factor.

**References:**

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