CSE 661

ADVANCED COMPUTER ARCHITECTURE

TERM PAPER PRELIMINARY REPORT

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1) Are you working on the project alone or with a partner?

I am working alone on this project

2) What is the general area of the project you are considering working on?

SpiNNaker is a massive parallel million core computer which is mainly targeted to simulate biological brain in realistic, spiking neural networks in real time which has a digital neuromorphic architecture. The total number of cores on the SpiNNaker architecture is 1,179,648 with a 128MB of memory to store and update their own weights. The term paper is a review of the SpiNNaker architecture and to comparing it with the conventional computer architectures

3) What is the draft project title?

A study of SpiNNaker computer architecture

4) Have you identified the papers that will assist you with your project?

* The SpiNNaker Project Steve B. Furber, Fellow IEEE, Francesco Galluppi, Steve Temple, and Luis A. Plana, Senior Member IEEE
* Paugam-Moisy H, Bohte S. Computing with spiking neuron networks. In Handbook of Natural Computing, Rozenberg G, B¨ack T, Kok J N (eds.), Springer-Verlag Berlin Heidelberg, 2012
* Modelling Spiking Neural Network from the Architecture Evaluation Perspective Yu Ji, You-Hui Zhang, Member, CCF, ACM, IEEE, and Wei-Min Zheng, Fellow, CCF, Member, ACM, IEEE.
* Comparing Neuromorphic Solutions in Action: Implementing a Bio-Inspired Solution to a Benchmark Classification Task on Three Parallel-Computing Platforms Alan Diamond,\* Thomas Nowotny, and Michael Schmuker