GSOM Draft Paper

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I. To Do

1) See papers in conferences and see the pattern of presentation and way of putting things in words
2) Why another paper on GPU GSOM? Disect the previous paper.
3) Code comparison and optimisation in each module.
4) Data dumping (configurable- IFDEF tags. log time-only data. without log time- timing)
5) Meat in the paper?
   a) Relation to deep learning?
   b) An idea of improvements in optimisations should also be considered. Even the idea is good enough to be mentioned.
6) Include a section on data. Data can be crucial because the nature of data matters a lot for algorithms like GSOM. Keep in mind to not include information about IIITD in the data.
7) Data section/ subsection. Can emphasis on this since the algorithm is dependent on it.
8) Search for more optimisation attempts
9) Results to compare? (with other implementations of this algorithm or other algorithms)
10) Comparative analysis with other possible algorithms (time series data). Related paper: Pattern Recognition in Time Series. Not explored much in energy (as much as I could see through my searches)

***Abstract*—What we've done**

***Keywords*-GSOM; optimisation;**

II. Introduction

Establishing the application. The usage of the algorithm. We use GSOM to analyse the energy usage pattern. The data of energy usage is provided by the Energy Lab of IIITD.

III. GSOM

A bit of GSOM algorithm. Only the relevant stuff. GSOM is Growing variant of Self Organising Maps. It?s a type of ANN. The 5 main parts of the algorithm (discussed below) form the neural networks layers.

Each layer (this idea may be dropped)

IV. Optimisations

We've considered several optimisation of GSOM algorithm at each layer. We target different optimisation types:

1) Data structure level, shared memory, embarrassingly parallel, etc.

V. Results, Speedup

We've compared our results with the C/C++ naive and C/C++ with OpenMP implementations. The optimisations according to each subpart are also included. These are mentioned in the Table. ¡number¿

VI. Discussion

The way forward and such

VII. Conclusion

Major emphasis on contribution of this paper in GSOM Second major emphasis on indirect contribution of this paper in Energy domain.

Application - Use in saving energy.
The analysis of energy usage pattern helps in identifying the factors responsible for unusual energy usage. This helps us target reduction of energy at areas where it?s more than usual and encourage patterns that resulted in less than usual usage. It is aimed that such a data can assist in lifestyle changes in users.

VIII. Acknowledgement

We thank Dr. Amarjeet Singh and the Energy Lab at IIITD for giving us permission to use the energy data of the smart meters for this study.

IX. Conclusion

The conclusion goes here. this is more of the conclusion

Acknowledgment

The authors would like to thank... more thanks here

References

[1] H. Kopka and P. W. Daly, *A Guide to LaTeX*, 3rd ed. Harlow, England: Addison-Wesley, 1999.