

SDMs & ML/NNets

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Goal

- Cheaper, faster Computing & Learning
- Integration Sparse Distributed Memories with NNets
- Exploitation of specialised hardwares

Results: SDM's versus other Embeddings

Experiments shows that SDM's have tenfolds the capacity of dense embeddings, with lower memory costs

Results: SDM+ML for Learning

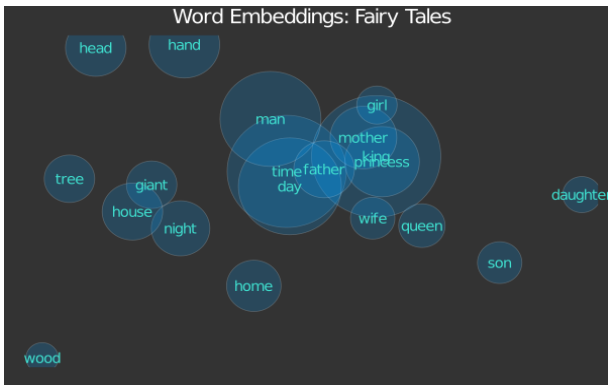
Datasets on which we could increase performances with SDMs:

- NLP: Semeval(Naive Bayes!), MRDA (conv. Nets)
- Multinomial Datasets: Car, Iris, Titanic

	Dense Vectors	SDMs Indices
Parameters	Size=512	N=10000 and w=10
Resolution per variable	32 bits	16 bits
Total Memory Cost	204.8 Mb	0.2 Mb

"Memory Spectrum" for above tests, N/w are sparse vector size/cardinal resp.

Results: NLP, Embeddings for small corpora



Visualising embeddings formed on few fairy tales, (corpus $\approx 65k$ rows, from [gigasquid](#))