〈〈Learning from LDA using Deep Neural Networks〉〉

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- <<Learning from LDA using Deep Neural Networks>>
  - **Motivated** by the transfer learning approach(**Dark knowledge**) proposed by Hinton et al. (2015), we present a novel method that **uses LDA to supervise the training of a deep neural network (DNN).**
  - Our experiments on a document classification task show that **a simple DNN can learn the LDA behavior pretty well**, while the inference is **speeded up tens or hundreds of times**.
  - **Topic discovery by transfer learning.** A known advantage of DNNs is that high-level representations can be learned automatically layer by layer. This property may help **DNN to discover topics from the raw TF input.**

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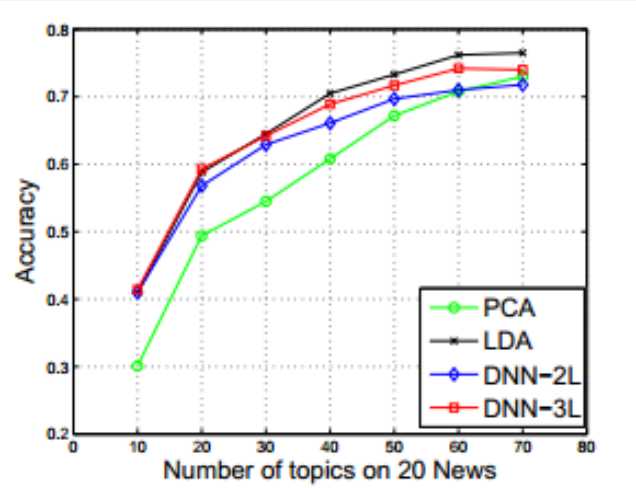

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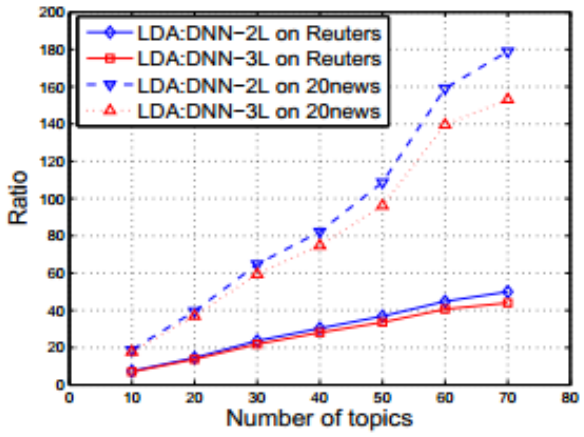

Figure 3: The ratio of inference time of LDA to DNN.

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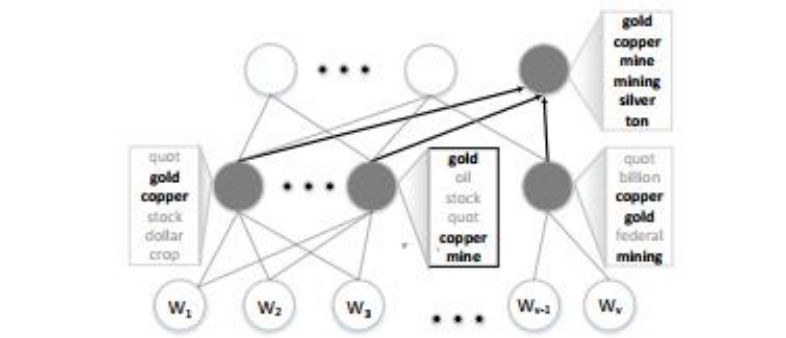

Figure 4: Discovery for the topic 'mining' with DNN. The words in dark are topic related words.

Thank You !

Peking University ⇨