

CS446 Project Proposal

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The goal of my project is to do a survey and study on learning probability distribution, probabilistic inference and hopefully touch on some graphical models.

Because I'm new to the field of machine learning, I would like more to do a broad survey and get exposed to different concepts and topics, over doing a project which is focused on one particular application. I like theoretic and fundamental work and would like to make use of some previous background in mathematical statistic. Besides, I think one of the main difficulties in machine learning is its abstract concept and algorithm. Thus this project would be a very good opportunity to push myself to think abstractly on the mathematical principles behind the implementations.

In this project, as a start, I plan to firstly read some review papers on machine learning, including its history and development. Then the major part of the project is to be able to explain a paper in the area of learning probability distribution (learning multi-linear representations of distributions for efficient inference, as an example), meaning an in-depth reading of the above mentioned paper. Or to be able to explain the background and related work of the above mentioned paper, meaning a wide range of reading of the cited papers.

I already downloaded and started to read the paper (mainly conceptually) cited in the introduction part The link to the above mentioned paper is :

<http://l2r.cs.illinois.edu/~danr/Papers/RothSa09.pdf>