ML Theory — Project Proposal

djhsu + mjt [list up to two members here]

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Interests. We have technical background in linear algebra, spectral methods, latent variable models, tensors, convex analysis, functional analysis, probability, and optimization. We are interested in sampling, optimization, representation, and generalization in the non-convex setting. [List 1-5 sentences in this section.]

Proposal. [ This section is also 1-5 sentences, but it needs to pass a “sniff test”; if you write a random sentence, don’t expect credit. Here are some project suggestions:

- Provide a cohesive survey of some collection of papers. Remember that your presentation is 2 slides and your handin is 1-2 pages (2 pages is a maximum). Therefore you can’t just summarize, you need to purify and unify.
- Provide a major simplification or reimagining of a single paper. A good example is Amit Daniely’s COLT 2017 paper, which reduced a COLT 2016 paper to 6 pages [Daniely, 2017].
- Solve an open problem.

Your project needs to include some theoretical content. ]

References

Amit Daniely. Depth separation for neural networks. In COLT, 2017. [Include 3-10 references via proper bibtex.]