

Project milestone 0

mjt

September 7, 2016

My NetID is mjt. I would like to be paired with someone with similar interests (*this part is optional*).

1. I'd like to simplify a paper by Telgarsky et al. (2015), which looks like a 50-page mess. I think this is possible because (*4 sentences on why this isn't hopeless*).
2. I'd like to improve the branching program analysis due to Kalai (2004), specifically removing the assumption that the target function is in the model. I think this should be possible since (*etc.*).
3. I'd like to survey and unify various results on arithmetic circuit complexity, for instance those of Raz (2010); Ran Raz (2008). The main thing I'd hope to unify is (*etc.*).

References

- A.T. Kalai. Learning monotonic linear functions. In *COLT*, 2004. URL http://research.microsoft.com/en-us/um/people/adum/publications/2004-Learning_Monotonic_Linear_Functions-long_version.pdf. long version.
- Amir Yehudayoff Ran Raz. Multilinear formulas, maximal-partition discrepancy and mixed-sources extractors. In *FOCS*, 2008.
- Ran Raz. Tensor-rank and lower bounds for arithmetic formulas. In *STOC*, 2010.
- Matus Telgarsky, Miroslav Dudík, and Robert Schapire. Convex risk minimization and conditional probability estimation. In *COLT*, 2015.