Convergence and Implicit Regularization of Stochastic Mirror Descent in Overparameterized Models

Sourav Sahoo, EE17B040

Main Reference

Navid Azizan and Babak Hassibi. 2018. Stochastic gradient/mirror descent: Minimax optimality and implicit regularization. arXiv preprint arXiv:1806.00952 (2018).

Contributions

The following contributions are primarily done in this work:

- We discuss some of the basic theory behind stochastic mirror descent present in the existing literature focussing on its convergence and implicit regularization for over-parameterized linear and non-linear models.
- We conduct experiments to prove selected results proposed in the main reference for the linear regime and try to replicate the results for the non-linear regime as proposed by the same authors in a related paper.
- We also design some novel experiments for the linear regime as described in Section 5.1.2 of this work.