STOCHASTIC OPTIMIZATION IN MACHINE LEARNING

Case Studies in Nonlinear Optimization

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AWESOME MOTIVATIONAL TITLE

Awesome Motivational Slide.
Yeah!

TABLE OF CONTENTS

INTRODUCTION

What are we doing? Why?

A STOCHASTIC QUASI NEWTON METHOD

STOCHASTIC QUASI NEWTON

What is it? Why? Main ideas, high-level pseudo code overview? short bfgs repitition? Extreme Cases (L-BFGS, SGD)

HIGGS-DATASET

Explain the Dataset quickly. Why is this good for SQN testing? Why is it challenging? (file size etc)

BEHAVIOR

Pretty picures about the behaviour of SQN on HIGGS and comparison with traditional SGD

PROXIMAL SPLITTING METHOD

Outline of Section by Jacob and Fin

FIRST PROX SLIDE

- hallo
- du muschi
- [?]

LOGISTIC REGRESSION: AN EXAMPLE

TASK

Explain what we want to do, and explain the dataset, and why using both SQN and Prox makes sense

RESULTS

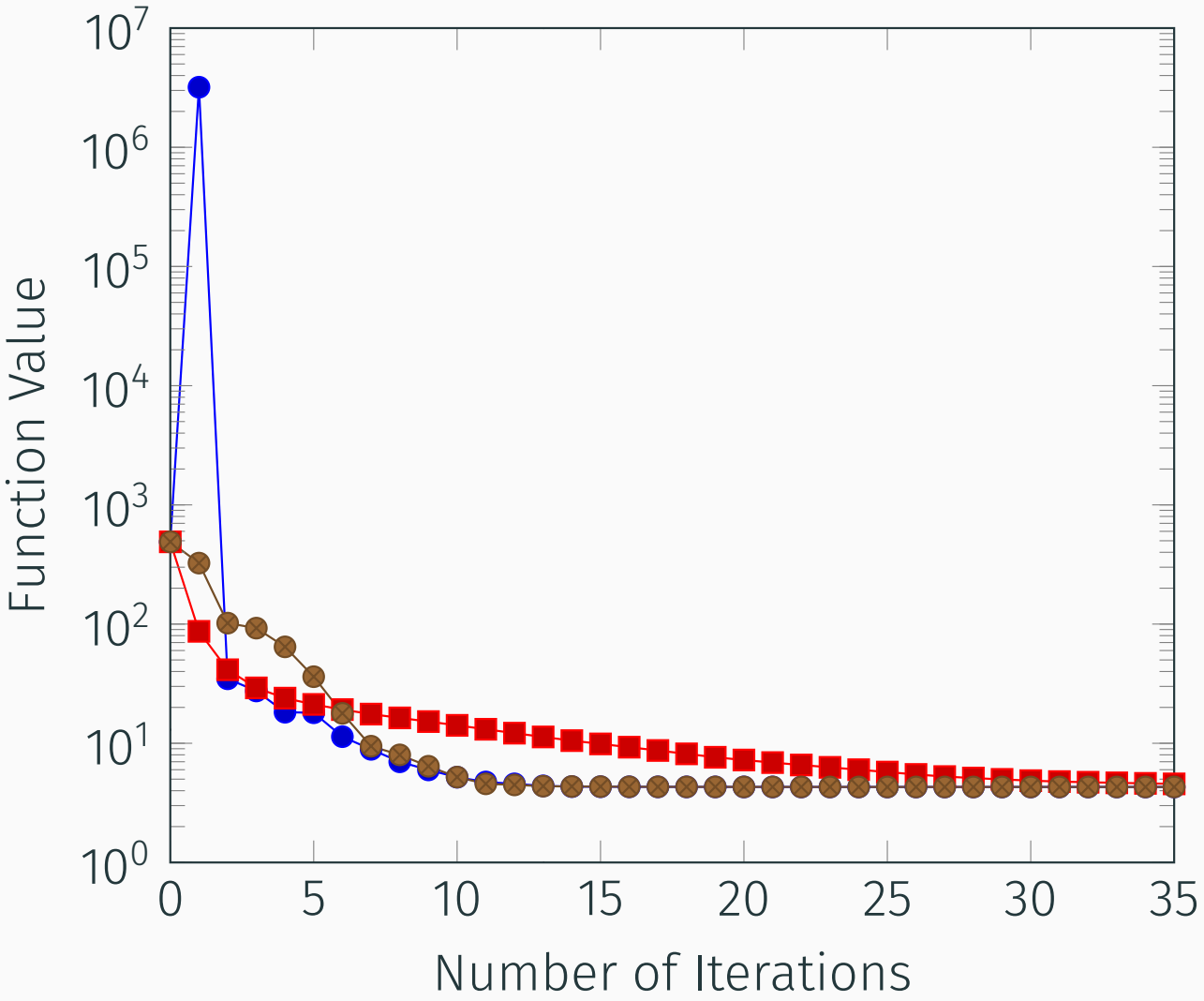
Nice table with SQN, SGD (no reg, L2), (Lasso,) Prox (L1) showing Obj. value in found optimum, CPU time, Iterations, F1 score of prediction model

Use different reg. parameters?? Stop after fixed time? after fixed iters? after insign. improvements

CONCLUSION

SUMMARY

TITLE


Function Value
10^7
10^6
10^5
10^4
10^3
10^2
10^1
10^0
0
5
10
15
20
25
30
35
Number of Iterations

hallo

Questions?

MAIN REFERENCES I