"Daily-Log of Internship at ZIB"

Utkarsh Sharma

22/5/23 - present

- **May 22, 2023**:
  - Started with Class on Prox methods and non-smooth convex optimization
  - Installed Julia locally and learnt its basic syntax
  - Submitted Homework exercises pertaining to Lecture-1
- **May 23, 2023**:
  - Read [1] sections 1 - 3
  - Went through class Lecture-2 and Lecture-3's notes and completed their exercises
  - Read [2] pages 1-10, with special attention to the assumptions listed and Algorithm - 1
- **May 24, 2023**:
  - Went through Lecture 4's notes and completed the exercises
  - Went through *Mert Pilanci (Stanford University): Monotone Operators* to understand maximal monotone operators and related stuff overlapping with [2]
- **May 25, 2023**:
  - Read *S. Boyd, J. Duchi, M. Pilanci, and L. Vandenberghe : Subgradients* lecture notes to understand some properties of subgradients
  - Continued reading about [2] and tried to build an intuition towards Algorithm-2
  - Went through Lecture Notes 5 of Crash Course
  - Homework Exercises pertaining to today's lecture
- **May 26, 2023**:
  - Watched *Gilbert Strang, Singular Value Decomposition* to learn about SVD and its mention in the class notes
  - Went through the notes of the last lecture
  - Homework Exercises for the last lecture
  - Installed Julia in the Z1 cluster of ZIB

References

[1] D. Drusvyatskiy, The proximal point method revisited (2017) 1–4.

[2] P. R. Johnstone, J. Eckstein, Projective splitting with forward steps: Asynchronous and block-iterative operator splitting, arXiv preprint arXiv:1803.07043 (Aug 2020). arXiv:1803.07043. URL https://arxiv.org/abs/1803.07043v7