MATH 4230 Project Specification

You may form a group of at most 2 students. You are required to read some articles related to optimization and submit a 10-20 pages report. The deadline is 11 April, 2022.

List of articles:

1) A. Chambolle, T. Pock, "A First-Order Primal-Dual Algorithm for Convex Problems with Applications to Imaging"
2) A. Chambolle, "An Algorithm for Total Variation Minimization and Applications"
3) Y. Xiao, T. Zeng, J. Yu, MK Ng, " Restoration of images corrupted by mixed Gaussianimpulse noise via l1–l0 minimization"
4) H Chang, MK Ng, T. Zeng, "Reducing artifacts in JPEG decompression via a learned dictionary"
5) X. Cai, R. Chan, and T. Zeng, "A Two-Stage Image Segmentation Method Using a Convex Variant of the Mumford–Shah Model and Thresholding"
6) Y. Huang, D. Lu and T. Zeng, "A Two-Step Approach for the Restoration of images Corrupted by Multiplicative Noise"
7) Y. Dong, and T. Zeng, "A Convex Variational Model for Restoring Blurred Images with Multiplicative Noise"
8) L. Chen, X. Li, D. Sun, and K. Toh, "On the equivalence of inexact proximal ALM and ADMM for a class of convex composite programming"
9) Y. Cui, D. Sun, K. Toh, "On the R-superlinear convergence of the KKT residuals generated by the augmented Lagrangian method for convex composite conic programming"
10) X. Zhao, D. Sun, K. Toh, "A Newton-CG Augmented Lagrangian Method for Semidefinite Programming"
11) S. Boyd, N. Parikh, "Distributed Optimization and Statistical Learning via the Alternating Direction Method of Multipliers"
12) N. Parikh, S. Boyd, "Proximal Algorithms"
13) J. Eckstein, DP. Bertsekas, "On the Douglas-Rachford splitting method and the proximal point algorithm for maximal monotone operators"
14) R. Sun, "Optimization for deep learning: theory and algorithms" 15) Any other related papers
15) Summary of (part of the) lecture contents
16) Any other papers