

## 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 15<sup>th</sup>, April, 2020.

### 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 Gaussian-impulse noise via  $l_1$ - $l_0$  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