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Convex and Non-Convex Optimization in Image Recovery and Segmentation

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<u>Abstract</u>

In this talk, we present some recent progress on variational approaches for image recovery and segmentation. First, a new convex variational model for restoring images degraded by blur and Rician noise is proposed. Based on the mathematical property of the noise, a quadratic penalty function technique is utilized to obtain a strictly convex model under mild condition, which ensures the uniqueness of the solution and the stabilization of the algorithm. Numerical results are presented to demonstrate the good performance of our approach. The idea of convex relaxation is then extended to other image recovery and segmentation tasks. Finally, we also discuss the image recovery issue in the framework of dictionary learning if time permitted.

> Date: 9 March 2017 (Thursday)
> Time: 2:30pm – 3:30pm
> Venue: Room 104, Y.C. Liang Hall, The Chinese University of Hong Kong

> > All are Welcome