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Computational Mathematics Seminar Series

Gauge Optimization, Duality, and Applications**Michael P. Friedlander, University of British Columbia**

Associate Professor, Computer Science

Lockett Hall 233

October 22, 2013 - 03:30 pm

Abstract:

Gauge functions significantly generalize the notion of a norm, and gauge optimization is the class of problems for finding the element of a convex set that is minimal with respect to a gauge. These conceptually simple problems appear in a remarkable array of applications. Their gauge structure allows for a special kind of duality framework that may lead to new algorithmic approaches. I will illustrate these ideas with applications in signal processing and machine learning.

Speaker's Bio:

Michael P. Friedlander is Associate Professor of Computer Science at the University of British Columbia. He received his PhD in Operations Research from Stanford University in 2002, and his BA in Physics from Cornell University in 1993. From 2002 to 2004 he was the Wilkinson Fellow in Scientific Computing at Argonne National Laboratory. He was a senior fellow at UCLA's Institute for Pure and Applied Mathematics in 2010, and is currently a visiting scholar at the Simons Institute at UC Berkeley. His research is primarily in developing numerical methods for constrained optimization, their software implementation, and their application in signal processing and image reconstruction.

