Title: Recent Work at the Intersection of Optimization and Linear Algebra

Abstract:
Numerous well-known problems in linear algebra can be considered as the optimization of a particular objective function over an appropriate search domain, and many classical iterations from numerical linear algebra have well-known counterparts in numerical optimization. I will present an overview of some of these problems and the methods for their solution. Specifically, I will focus on linear and multi-linear eigenvalue and singular value problems, and their coincidence with optimization over various Riemannian manifolds.