Next Steps in Mathematical Optimization

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Linear algebra

- EE103/CME103: Introduction to Matrix Methods
  - Online material: `http://stanford.edu/class/ee103/`
- *Numerical Linear Algebra* by Trefethen and Bau
- *Matrix Computations* by Golub and Van Loan

Optimization books

- *Convex Optimization* by Boyd and Vandenberghe
  - `http://web.stanford.edu/~boyd/cvxbook/`
- *Numerical Optimization* by Nocedal and Wright
- *Linear and Nonlinear Programming* by Luenberger and Ye

Optimization classes

- EE364a: Convex Optimization I
  - `http://stanford.edu/class/ee364a/`
- EE364b: Convex Optimization II
  - `http://stanford.edu/class/ee364b/`
- CME304: Numerical Optimization
  - `http://web.stanford.edu/class/cme304/`

Topics

- Optimization duality
- Semidefinite programming and more sophisticated convex modeling
- (Accelerated) first-order methods for scale and speed (compressed sensing)
- Interior Point Methods
- Distributed Optimization
- Stochastic Optimization
- Convex techniques for nonconvex problems