Convex Optimization Short Course

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About the course

- materials
  - three lectures
  - corresponding code (iPython notebooks)

  online at

  `stanford.edu/~boyd/papers/cvx_short_course`
- course goal:
  bring you up to speed on basic (applied) convex optimization
- our focus:
  - problem formulation
  - applications
  - coding

About the course

- we *won't* cover
  - theory
  - duality & optimality conditions
  - solution algorithms
  - convex relaxations

  (you can learn these things later)

- you need to know some basic
  - linear algebra, probability, and computer science
  - Python, Matlab, or Julia

Outline

1. Convex Optimization Overview
   - read chapter 1 of *Convex Optimization*
   - install CVX, CVXPY, or Convex.jl and 'hello world' in it
2. Constructive Convex Analysis and Disciplined Convex Programming
   - try out `dcp.stanford.edu`
   - explore DCP in your chosen language
3. Convex Optimization Applications
   - explore / modify application codes
   - try your own problems ...

Ready for more?

- *Convex Optimization* (book)
- *EE364a/b* (course slides, videos, code, homework, . . .)
- software CVX, CVXPY, Convex.jl

all available online

. . . and many other books and papers on convex analysis, convex optimization, and applications