

## HMWK 4 for AMSC 607 / CMSC 764 Fall 2006

**30 points, due December 14, 12 noon**

**(but early submission would be appreciated).**

**You may submit by email, if more convenient for you.**

**Late penalty will be the same as for the term project.**

Show all work. All work must be your own (i.e., no group efforts are allowed). If you use a reference book, cite it, or you will lose credit!

1. (10) (Note: This is not a group project!) Choose one application of either semidefinite programming or conic programming that was not already chosen for the in-class exercise and is not a term project subject. Prepare a few slides to explain the application to your classmates. (Use powerpoint, latex, handwriting, or whatever you prefer.) Email the slides to me (oleary@cs.umd.edu) or hand them in.

Note: Each member of a group for which slides were posted following the first in-class exercise already has 10 points on this problem and does not need to do any additional work. Exception: If you were in the one group that sent the slides much later (visualization of high-dimensional data), you have 5 points; you can either take this grade or redo the project individually.

2. (10) (Note: This is not a group project!) Write a review of a Matlab software package for conic optimization, similar to the ones done in class for SDP. In addition, include output verifying that the package works on some test problem.

Note: Each member of a group for which a report was posted following the second in-class exercise already has 10 points on this problem and does not need to do any additional work.

3. Do **one** of the following:

- (10) Attend the seminar by Olena Shevchenko and write a brief (perhaps 250 word) summary of what she talked about and any questions you have about the work.
- (10) Do Exercise 4.7.4 on p.66 of Nemirovski's notes. (Skip the part about evaluating the arithmetic cost.)