SUMO Symposium

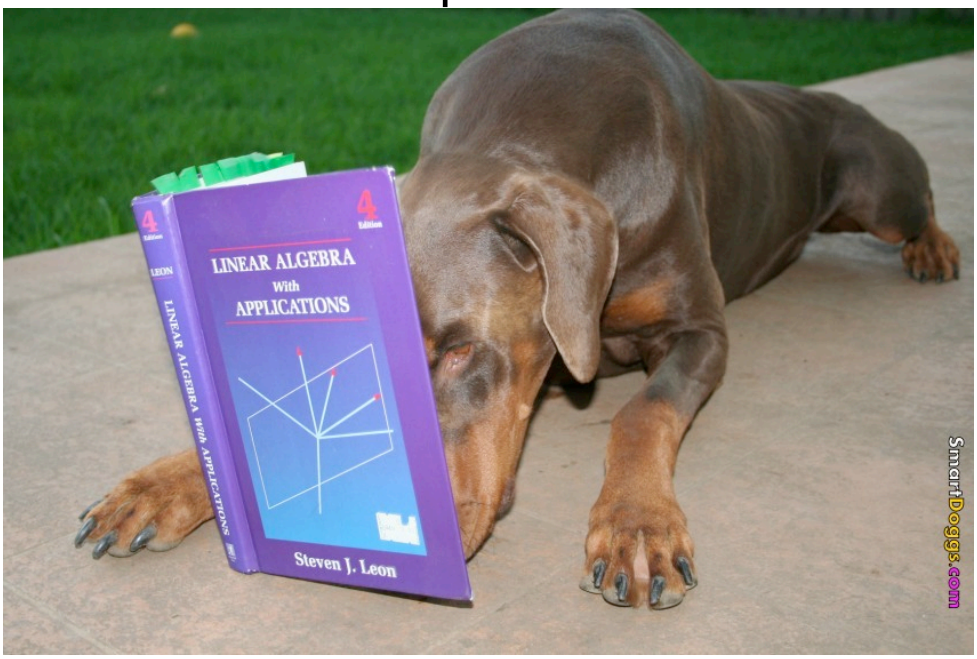
Tuesday, November 13th

5:00-6:00pm, room 380Y

(Snacks Provided)

Lies I learned in Math 51

Joseph Victor



ABSTRACT:

If you took Math 51 here at Stanford, you might have learned to put a matrix in a strange thing called reduced-row-echelon form using Gaussian Elimination.

This is a great way to get down and dirty and solve systems, but its formal properties are exactly what one might expect of a form whose definition is “the thing you get when you apply this algorithm".

By re-imagining Gaussian Elimination as a family of matrix factorizations, we can clarify our thinking about these algorithms and come up with new ones.

We will discuss *LU*-factorization, *JR*-factorization and rank-factorization, and use this language to deriving algorithms for solving linear systems and define and compute the lovely and mysterious Moore-Penrose Pseudoinverse.

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