

Outline / Objectives (begin by showing notebook for motivation... then switch to whiteboard)

Vectors:

- definition, intuition, notation
- addition, subtraction, scaling, dot product
- length, unit vectors
- distance between two points using vector notation
- cosine similarity
- linear combinations of vectors

Matrices:

- definition, notation
- addition, subtraction, mult. by scalar
- multiplication
 - dot product revisited
 - associative, not commutative
- transpose, inverse, verify inverse
 - properties of transpose & inverse
- applications
 - system of linear equations - 11n eqs. is ~~overdetermined~~ overdetermined
 - NNs
 - PCA, matrix fact. for recommenders
 - most everything...