Summary

Linear algebra

- Vectors & matrices

  - operators

  - gradients & Jacobians

| 1.2 | 3.2 | 5.8 |

1.3	3.5	8.3
3.2	9.2	2.3
7.4	0.2	9.2

[The Matrix Cookbook, Petersen and Pedersen 2012]

Probabilities

- Event: $a \in [0, \ldots, n-1]$

- Probability: $P(a)$

- Sampling: $a \sim P$

- Expectation: $\mathbb{E}_{a \sim P}[f(a)]$

[Introduction to Probability, Bertsekas and Tsitsiklis 2002]
[All of Statistics, Wasserman 2004]

Tensors

- Tensors: order-d matrices

- Basic building block of deep networks