What's Next?

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Machine Learning

- Our course was heavy on model-free methods (i.e. no assumptions about $\mathcal{P}_{\mathcal{X} \times \mathcal{Y}}$.)

- Worth looking more into probabilistic approaches
  - Joan Bruna's DS-GA 1005: graphical models, probabilistic learning and inference
  - Petrov's CSCI-GA 3033-001: Statistical NLP
  - books by David Barber and Kevin Murphy
- Learn neural networks!
  - Cho's DS-GA 3001: Neural networks for NLP
  - Bowman's LING-GA 3340-002: Seminar in Semantics: Artificial NNs
  - LeCun's Neural networks / vision course

Machine Learning

1. Look at other course notes at this level.
   - Every course covers a different subset of topics.
   - Different perspectives. (e.g. Bayesian / Probabilistic)
2. Read on some "second semester" topics
   - LDA / Topic Models (DS-GA 1005)
   - Sequence models: Hidden Markov Models / MEMMs / CRFs (DS-GA 1005)
   - Bayesian methods
   - Collaborative Filtering / Recommendations
   - Ranking
   - Bandit problems (Thompson sampling / UCB methods)
   - Gaussian processes

Other Stuff To Learn

- Statistics
- Data Structures & Algorithms (Theoretical)
- Some production programming language (e.g. Java, C++)