

Next Steps

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Machine Learning: What else to learn?

- 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
 - graphical models, probabilistic learning and inference, probabilistic programming
 - books by David Barber and Kevin Murphy
- Learn more about neural networks
 - Neural networks for NLP (Yoav Goldberg's book)
 - Deep learning book (Goodfellow et al.)
 - Stanford's CS231n: Neural Networks for Vision (lecture on YouTube)

Machine Learning: What else to learn?

- 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
 - Latent Dirichlet Allocation (LDA) / Topic Models
 - Sequence models: Hidden Markov Models / MEMMs / CRFs (Amanda Stent’s NLP course in 2018)
 - Bayesian methods
 - Collaborative Filtering / Recommendations
 - Ranking
 - Bandit problems (Thompson sampling / UCB methods)
 - Gaussian processes