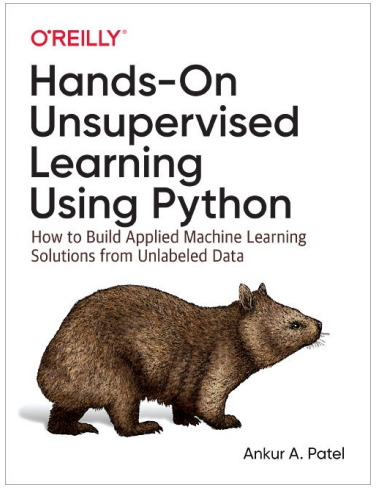


Inside Unsupervised Learning
Generative Models and Recommender Systems

What you will learn.

By the end of this course, you will understand:

- The difference between discriminative and generative models
- Why generative models are so powerful
- The various types of generative models used today

And you'll be able to:

- Train a generative model (i.e., a restricted Boltzmann machine)
- Build a movie recommender system using RBMs

Schedule.

- Introduction to unsupervised learning
- Motivation for generative models
- Motivation for recommender systems

- Q&A and Break

- Prepare MovieLens dataset
- Introduce generative models and RBMs
- Build movie recommender systems

- Wrap-up and Q&A

Why unsupervised learning?

The Machine Learning Ecosystem

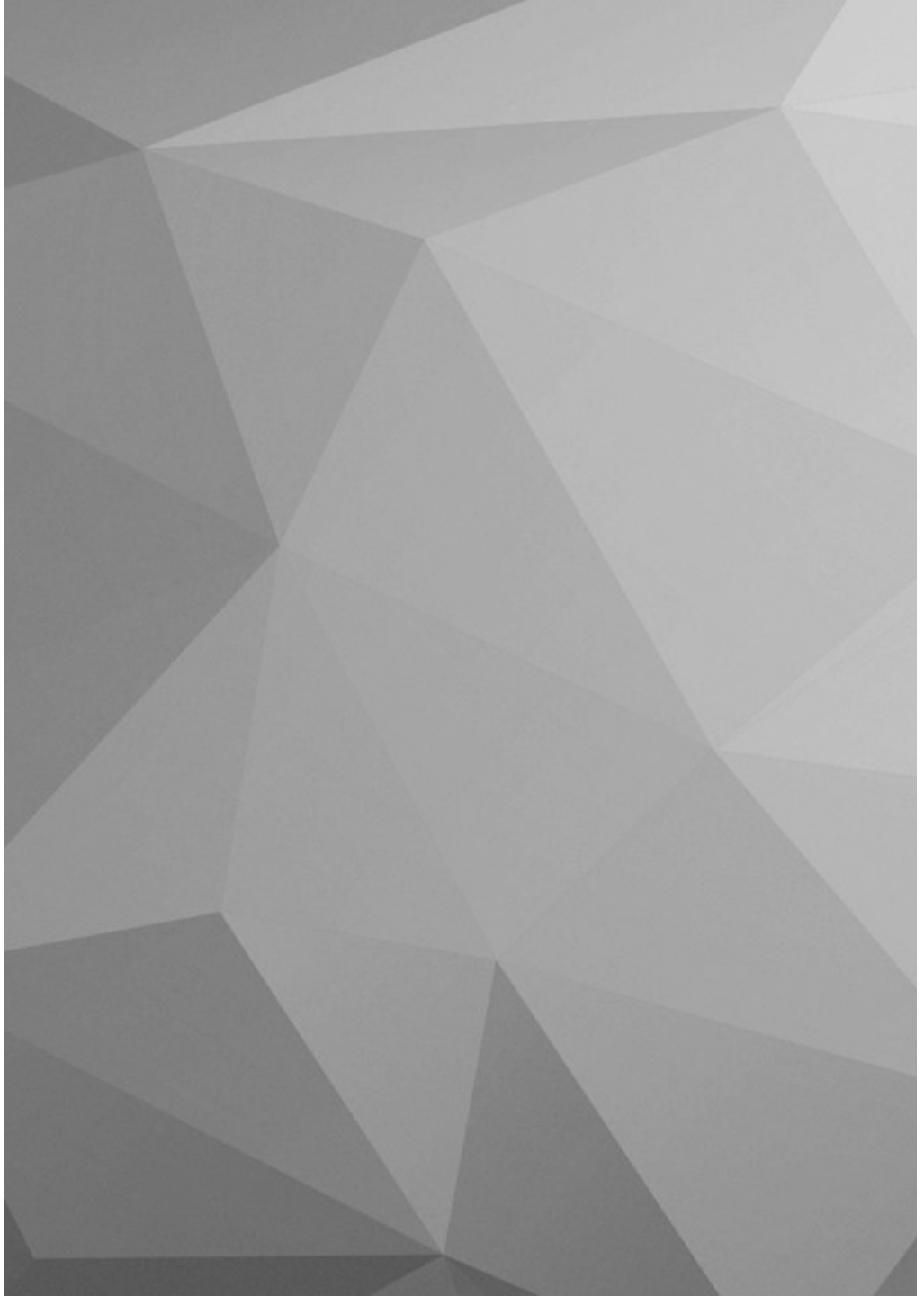
- Supervised vs. unsupervised vs. reinforcement learning
- Semi-supervised learning

Common Problems in Machine Learning

- Insufficient labeled data
- How to generate new data to augment datasets

Generative models.

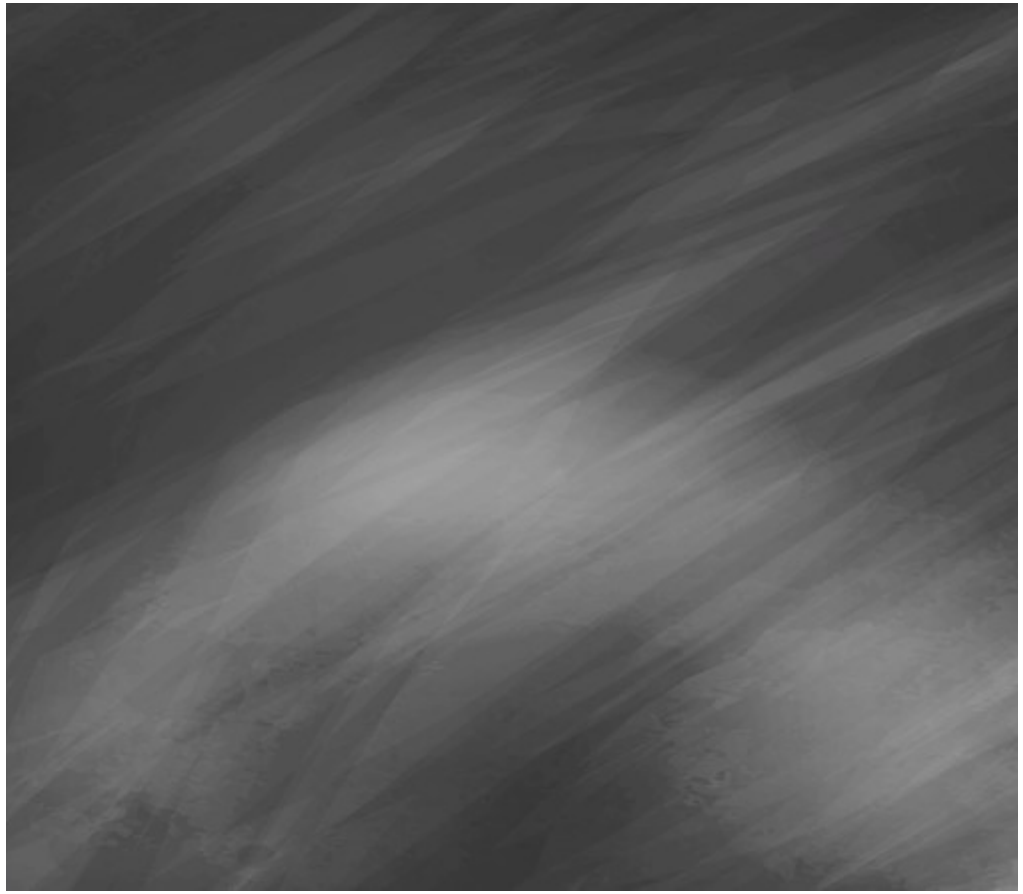
- Restricted Boltzmann machines (RBMs)
- Deep Belief Networks (DBNs)
- Generative Adversarial Networks (GANs)



Movie Recommender System

We will use the MovieLens 20M dataset.

- The original ratings file has ~20 million ratings, ~27k movies, and ~138k users.
- We will use a reduced version with ~664k ratings, 1k movies, and 1k users.
- As a baseline, we will build non-generative recommender systems.
- Then, we will build a recommender system using a generative model (i.e., RBMs).



Let‘s Go Build.

See you soon and thank you!

For more, see *Hands-on Unsupervised Learning Using Python*, available on O'Reilly Safari and Amazon.

The next course in *Inside Unsupervised Learning* is Anomaly Detection using Dimensionality Reduction.

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