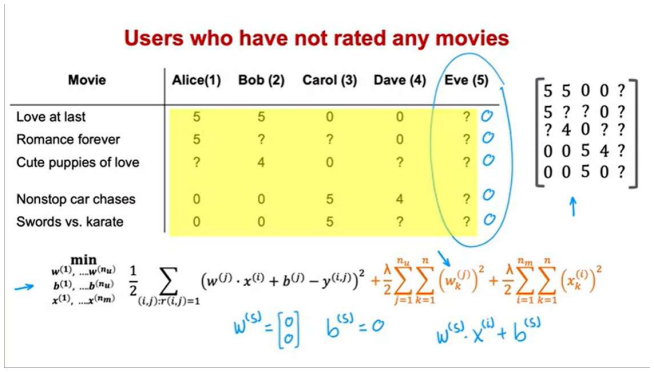
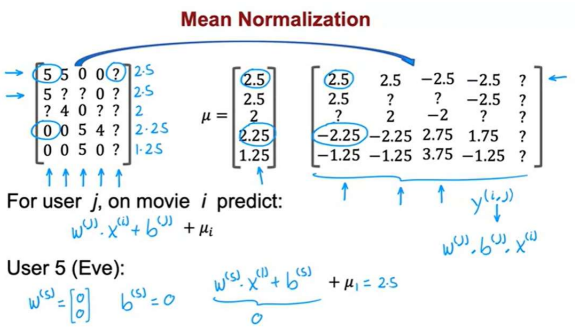
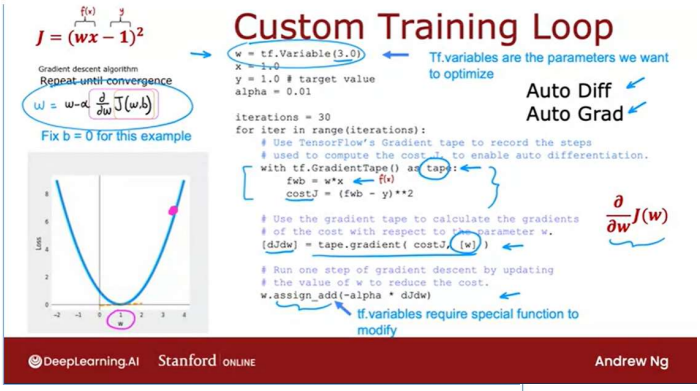
Collaborative filtering

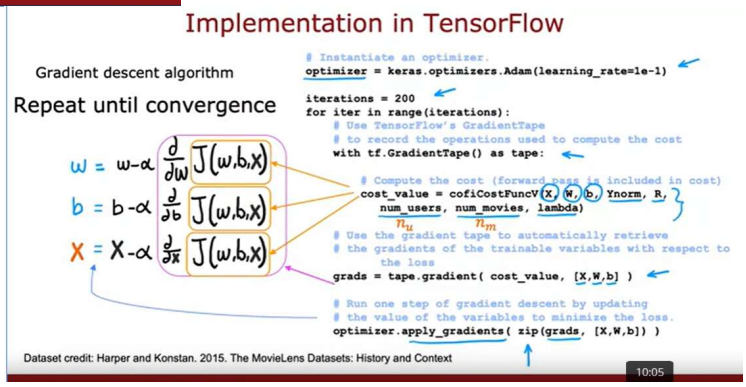
Saturday, December 10, 2022 9:42 AM

Resources:- https://www.coursera.org/learn/unsupervised-learning-recommenders-reinforcement-learning/home/week/2









Finding related items

The features $x^{(i)}$ of item i are quite hard to interpret.

To find other items related to it, find item k with $x^{(k)}$ similar to $x^{(i)}$

i.e. with smallest distance

$$\sum_{l=1}^{n} \left(x_l^{(k)} - x_l^{(i)}\right)^2$$

$$\left\|x^{(k)} - x^{(i)}\right\|^2$$

Limitations of Collaborative Filtering

- Cold start problem. How to
  - rank new items that few users have rated?
  - show something reasonable to new users who have rated few items?

Use side information about items or users:

- Item: Genre, movie stars, studio, ….
- User: Demographics (age, gender, location), expressed preferences, …

DeepLearning.AI Stanford ONLINE Andrew Ng