8-2: The Cold Start Problem

M

UNIVERSITY OF MINNESOTA
Introduction to Recommender Systems

Learning Objectives

- To understand the various cold-start problems:
  - New user
  - New item
  - New system
- To understand various approaches to addressing cold start problems

Introduction to Recommender Systems

M UNIVERSITY OF MINNESOTA

New Users … how to handle

- Problem: lack of a profile of preferences
  - Not an issue for non-personalized
  - When possible, provide useful default personalization options
    - Popular items, demographically relevant
    - Product association
    - Even trust-based social network data
  - Or get explicit preferences (products, attributes)
  - Phase in personalization as feasible

Introduction to Recommender Systems

UNIVERSITY OF MINNESOTA

New Items – How to Handle

- Challenge: Can't recommend ... but need ratings (or equivalent) quickly
- Options
  - Use content-based approaches (including similarity to other items) as an early proxy
  - Recommend to random, or well-chosen set of users (people with diverse tastes, tolerance, interest, influence)

Introduction to Recommender Systems

UNIVERSITY OF MINNESOTA

New Systems – Worst of Both?

- Nothing else to anchor to … how do you bootstrap a new system?
  - Syndicated data (get data from another source)
  - Design a non-recommender system that captures data to feed a later recommender

Introduction to Recommender Systems

UNIVERSITY OF MINNESOTA

Plenty of Research

- Mostly focuses on use of other forms of data
  - Tagging
  - Social networks
  - Techniques to infer or boost ratings
  - Preference elicitation strategies

Introduction to Recommender Systems

UNIVERSITY OF MINNESOTA

8-2: The Cold Start Problem

UNIVERSITY OF MINNESOTA

Introduction to Recommender Systems