Introduction to Course and Specialization

Introductions

- Joseph A. Konstan
- Michael D. Ekstrand

Dedication

- John T. Riedl (1962-2013)
  - Pioneer in Recommender Systems
  - Colleague and Mentor
  - co-Creator of the original version of this course

Specialization Overview

- Four Courses
  - Non-Personalized and Content-Based
  - Nearest-Neighbor Collaborative Filtering
  - Evaluation and Metrics
  - Matrix Factorization and Advanced Techniques
- Capstone Project
  - Case Study Analysis – Design Best Recommender for a Business Use Case

Order and Dependencies

- Courses Build on Each Other Sequentially
  - If you have background, feel free to take any courses individually, but …
    - Each course does depend on concepts, notation, and techniques from the earlier courses
    - Honors Track programming assignments have sequential dependencies
  - We strongly encourage taking courses in order

Two Tracks

- Standard Track
  - No Programming Required
  - Implement Algorithms and Metrics in Spreadsheets
- Honors Track
  - Add Programming Using LensKit toolkit
    - Open-Source Recommender Toolkit in Java
  - Includes all Standard Track material, plus 1-2 programming assignments per course
  - Capstone extended to include programmed evaluation

Course Features

- Focus on Core Algorithms and Metrics
  - examples from research and industry use
  - learn-by-doing assignments to implement and evaluate
- Broad Coverage of Related Topics
  - recommender user experience and interfaces
  - tours of influential reference implementations
- Interviews with ~20 leaders in the field

Recommended Background …

- College-level algebra
  - We will be dealing with statistics, matrices, etc.
- Basic computing concepts and skills
  - Algorithms
  - Mathematical formulas
  - Spreadsheet computations
- For Honors Track
  - Java programming with algorithms and data structures (intermediate-level or greater skill)

Interaction … the Class Forums

- We will not be taking questions directly – all questions must come via the class forums
  - Be sure to vote up questions you feel most deserve answers
  - We will post replies to top vote-getters

Course Structure and Workload

- Each course is designed to take 4-5 weeks
  - Two or Three assignments
  - Quizzes for each major topic
  - Honors Track adds 1-2 programming assignments
- We break courses into weeks to help guide you, but …
  - Working ahead on assignments is important … don't wait until after all video lectures to start

Academic Standards

- Academic integrity is essential
- Honor code online
- All assignments and exams must be your own work
  - You are free to study with others, but when you start working on the assignment questions, you must work alone

Feedback and Surveys

- We're all still learning, and we will be studying how this course goes both to make mid-course corrections (where possible) and to shape future offerings
- Please participate in surveys and provide feedback
  - We often partner with education researchers to analyze data and learn from the experience
  - Interested in what we know so far … see our paper in the April 2015 issue of *ACM Trans. on Computer-Human Interaction*.
    - http://md.ekstrandom.net/research/pubs/recsys-mooc-tochi/

Course #1: Non-Personalized and Content-Based

What to expect:

- Learn when and how to recommend items and products based on overall preference and popularity
- Learn how to construct demographic and stereotyped recommenders
- Learn how to build content-based filtering recommenders using the vector space model

Final Thoughts

- We're glad you're here
- Own your educational experience
  - No stigma associated with view-only
- But commit enough time to get value

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