Metropolitan State University

ICS 450: Collective Intelligence and the Web

A. Course Description

Credits: 4

Prerequisites:
ICS 225 Web Design and Implementation AND MATH 215 Discrete Mathematics
OR
ICS 240 Introduction to Data Structures AND MATH 215 Discrete Mathematics

Lab Hours/ Weeks: Corequisites: None

Lecture Hours/ Week:

MnTC Goals: None

Collective intelligence is known as: collecting information about different groups of people, studying this information, and analyzing it in order to draw statistical conclusions about these groups of people. Collective intelligence is applied to several domains such as search engines, social networks, financial fraud detection, product marketing, stock market analysis, and national security. The main focus of this course is on understanding the fundamentals of collective intelligence, introducing the remarkable machine learning and data mining algorithms, used in this domain, and studying real life cases such as product recommendations on Amazon, friend recommendation on Facebook, google search engine. Students will explore in depth the theoretical and technical concepts of: making recommendations, making decisions, studying and analyzing the behavior of groups of people, searching the web using web engines, and document filtering.

B. Course Effective Dates: 05/03/2017 - Present

C. Outline of Major Content Areas:

See Course Description for major content areas.

D. Learning Outcomes (General)

1. Investigate and examine the different machine learning algorithms used in collective intelligence
2. Compare and analyze the different collaborative filtering techniques used in recommendation systems, social networks and E-commerce.
3. Describe and evaluate groups behavior using clustering methods
4. Examine and explain how search engines work,
5. Recognize and evaluate the components of search engines
6. Analyze and categorize the different types of document filtering methods
7. Distinguish and predict users preferences on the web, using modeling with decision trees
8. Design and develop online people matching applications using support-vector machines

E. Learning Outcomes (MN Transfer Curriculum)

This contains no goal areas.

G. Special Information

Note: Students are responsible to both be aware of and abide by prerequisites for ICS courses for which they enroll, and will be administratively dropped from a course if they have not met prerequisites.