(Notes taken from Advanced Semantic Technologies class - January 29, 2013)

last week's (Jan 22) notes page:
https://docs.google.com/document/d/1qQyJwk18qwEeXVRoiSEU1FedlS47VUS-SGHAUcBkK90/edit
next week's (Feb 5) notes page:
https://docs.google.com/document/d/1PgXVkzXU1Q3xzLsyPyuTwpYs9YYeSpRaXNYImjtTb1M/edit

Please include names for attendance:

Katie Chastain
Zach Fry
Yue Liu (Robin)
sujoy K Sikdar will be late
John Schwartz
Scott Brown
Ryan Breseman

Everyone should request TWC account

Presentations:

Zach Fry
Social machine:
Online commerce
Use of internet for online markets - Ebay, iTunes, Esty
addition of payment systems - Paypal
Examples of teaching a background system:
-advertising based on user's preferences

Wine Agent:
paper focused on wine and food preferences, social media
class discussion focused on context of meal - foods before and after, details of wine creation process

Katie Chastain
Social machine:
Online game with user rule enforcement
League of Legends, team game
Tribunal judgment system
-multiple report options: flaming, unhelpful behavior, inappropriate language
-users review cases and pass judgments

-requires players to reach certain involvement level (level 30) before they can judge
Example of 3 users banned from a Tournament for being rude
Certain gaming companies use one login across several games
-potential to use this to create profile of player behavior

Wine agent:
extension for pairing wine glasses with particular wines
most wines have straightforward matches, but this can help with blended wines
checks attributes of glass against desired attributes for serving a wine
materials, shape, stem length, size, tradition

Semantic research:
First responder system
Speed crucial to utility
Based on elements in incident, returns potentially relevant information
-Example: location of battery, fuel tank in car accident from car make, model

Ryan Breseman
Research Idea:
RPI call center (for fundraising) - RenXChange
- 8 supervisors, 7 callers per teams
- supervisors draft a new team each semester.
- caller statistics include percentage new money; fraction new money; attendance; Jeopardy score
- how can a supervisor set criteria for the “best” caller to select for his team?
-- most pledges, best conversion rate, best total pledge amount
- predict choices of other supervisors? try to pick teams for greatest overall happiness (team happiness, and also overall call center happiness). determine the desire for new callers

There are properties within the team, and properties within the entire call center.
This model doesn’t account for what the callers want (like couples working together)
This model cannot use the traditional “marriage problem” solution if the strength of a candidate is dependant on the other members of your team.
(http://en.wikipedia.org/wiki/Stable_marriage_problem)
- The call center has access to data about alumni, such as what school they were a part of (eg, Science or Engineering); year of graduation; clubs/affiliation; employer information; income(?). The callers themselves do not necessarily have access to this information. This data is not necessarily well-organized or well-integrated.

Wine Agent:
- User preference: integrate preferences of users who are attending a particular event together to figure out an ideal wine to serve at that event?

- Uploading data: restaurant menus maintained online - data is handy, but someone needs to keep this up to date and accurate. How to incent restaurants to do this uploading themselves? Wine Agent needs a sort of “critical mass” of users to make it worth a restaurant’s while to interact with it.

Social Machine:
Orienteering:
- Given a compass and a detailed topographical map, navigate an area through checkpoints as quickly as possible. The course is unknown until the start of the race - so ideally, you are not making your own course.
- Proposal: a site where a user can upload a map and criteria for the course they want (difficulty, how much climbing, time, etc), and other users can design a course for that user. Also offer feedback on the courses after completing them, to determine the “best” map that fits given criteria.
- Maintain database of proposed courses.
- Keep (invisible) scores for users based on how good their proposed courses are.
- Incentive structure? People like designing courses; it is a good training exercise; partner system

John Schwartz
initial discussion about robots.txt - and how it has limitations
Social machine:
Social network machine
-gathers data from multiple social networks
-allows searches
-allows (and rewards) designation of friends
-aggregation of accounts
recent facebook update: people who like things I like
Watson eating blogs, attempting to determine matches between blogs and Twitter accounts
(I’m not sure where I heard this but maybe it was here:
http://www.cs.rpi.edu/news/colloquia/Apr05_2012.html)

Ticker Picker Pro:
-online system that made stock picking into a game
-consistently strong results

Wine agent:
Items considered that weren’t covered in class:
-Menu information from restaurants
-integration with social media
Items not considered that were covered in class:
-appetizers
-cost analysis

Scott Brown - missed that we had to turn in homework before class.
Social machine:
“Political Machine”
Nomic - game by Peter Suber
    -social politics
    -all rules are changeable
    -long-running: one game has gone as far as 6700 proposals, 1100 rules
Republic Paradigm
    -count on representatives to set rules
    -important to be familiar with each possible representative
Klout
    -ranks your influence
    -based on social networking friends’ votes
Questions:
    -How respected is someone?
    -Who do they respect?
    -What do they care about?
    -Who cares about the things that they care about?
Create system for learning how people whose political decisions we care about vote
Potential for abuse of system through bribery, misinformation
- Granularity: what do we mean by “respect”? breakdown by individual issues.

Sujoy Sikdar
Social machine:
Social networks only effective if they can reach to large group
Reuters Market Light
    -phone service for farmers
    -gives weather information, crop suggestions, soil nutrients, market status
    -advice on farming practices throughout process
Idea: social network for areas with low connectivity, developing areas
    -connect experts to end users
    -long term weather forecast
    -recommend seed varieties
    -recommend appropriate markets
    -recommend support price to local government
        -minimum buy price government will buy crops at
    -allow funding agencies to assess project risks
    -reward communities that adopt best practices

Wine agent:
In class
    -gastronomical context of meal

-machine learning on order history and ratings

OWL: Web Ontology Language
Reasoners (eg, Pellet): make implicit information explicit in an ontology, give full deductive closure.

SemantEco
Help people monitor ecological and environmental information
Babies in a town were getting sick, turned out to be due to water impurities
A system was needed to identify patterns in illnesses in relation to other factors
Difficulties:
-differing syntaxes
-differing data schemas
Use W3C standards RDF, OWL
Use case: aid scientists in discovering data about water quality and correlation with populations of certain organisms
-model and query:
-geographic regions
-time periods
-measured variables
-organisms
-combine data from EPA and USGS water data and Bird count Data from eBird
Have to determine if water quality is in fact the cause of an issue
Standardized vocabulary
-focused on measurements
-standardized units
-'of Entity'/'has Characteristic'
-'has Value'
-'has Unit'
-'from Source'
Encoding domain knowledge
-modularization
-water module
-air module
-pollution module
-inheritance important
Checking pollution levels vs allowable pollution levels
Checking regulation violations
Defining varying pollution levels for different areas
Evaluate effectiveness of moving species
Pull pollutants from a list maintained by experts

-possibly combine data from multiple expert sources