



## Artificial Intelligence Techniques

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Internet Applications 3

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## Plan for next four weeks

- Week A – AI on internet, basic introduction to semantic web, agents.
- Week B – Microformats
- Week C – Collective Intelligence and searching 1
- Week D – Collective Intelligence and searching 2

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## Your task

- I want you to produce a 5-10 minute presentation that expands on one of the following aspects:
  - OWL
  - RDF
  - Problems with semantic Web
- Also 5-10 minutes on linking AI and semantic web

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## Aims of sessions

- What is collective intelligence?
- Some non-AI examples
- Cases
  - Collaborative filtering

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## What is collective Intelligence?

- It has been around for a while.
- One definition includes "...combining of behaviour, preferences, or ideas of a group of people to create novel insights" Segaran (2007)
- So collecting data from groups of people, combine it and analyze it.

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## What is the biggest information source out there?

- Internet!
- Most commonly Web2.0 applications.
  
- It has been described as "building smart Web 2.0 applications"

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## Examples- non-AI

- Wikipedia –entirely produce by contributors.
- Reddit.com – where people vote on links to other websites.
- Amazon – readers ranking suppliers and products.

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## AI related examples

- Recommendation system based using social networks and your preferences.

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## Collaborative Filtering

- How do you get recommendations?
  - Friends?
- Which Friend has the 'best taste'?
  - Generally learned over a long period of time.
  - Usually like what you like.

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## Elements

- Database/file of recommendations
  - Produce from a file
  - Produce from crawling on web.
- Some measure of the recommenders
- Some measure of you likes to theirs.

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## Recommender system

- What is we want a movie recommendation.
  - We could look for a critic who has taste most similar to our own and use their ratings.
  - What we could also do is selected a critic but weight their scores against other critics scores.

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## Example taken from Segaran(2007) pp 7-17

```
recommendations.py - C:\Python25\lib\recommendations.py
File Edit Format Run Options Windows Help
from math import sqrt

critics={'Lisa':{'Superman 1':2.5,'Superman 2':3,'Superman 3':4},
'Sarah':{'Superman 1':5,'Superman 2':10,'Superman 3':13},
'Tom':{'Superman 1':10,'Superman 2':10,'Superman 3':10},
'Jack':{'Superman 1':2.5,'Superman 2':3,'Superman 3':0},
'Jill':{'Superman 1':2.5,'Superman 2':3,'Superman 3':4}}
```

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- This could be extended to Social Network sites
  - APIs exist for del.icio.us
  - This can be used to find popular sites based on tags.

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## Other examples

- Full-text search engines
  - Using web-crawlers
  - Index based on words in the text.
- Learning from clicks
  - Systems designed to build models of what is the most likely based on passed clicks.

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## References

- Segaran (2007) Programming collective Intelligence O'Reilly isbn- 0-596-52932-5

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