

Personalizing Relevance on the Semantic Web

through Trusted Recommendations from a Social Network

Tom Heath
Enrico Motta

Knowledge Media Institute
The Open University

12/06/2006

search results, personalised to you

overview

- a traditional approach to personalisation
- re-defining relevance
- our approach (work in progress)
 - personalising relevance in information seeking
 - recommendations from people we trust
 - semantic web as deployment platform

personalisation: a traditional approach



Recommended for Tom Heath

 (If you're not Tom Heath, [click here.](#))

Narrow by Event

[Page You Made](#)

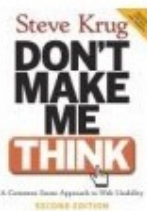
Narrow by Category

Your Favourites [Change](#)[Books](#)[Music](#)[DVD](#)

More Categories

[PC & Video Games](#)[Electronics & Photo](#)[Kitchen & Home](#)[Garden & Outdoors](#)[Software](#)[DIY & Tools](#)[Toys & Games](#)[Video](#)Recommendations for you are based on [items you own](#) and more.[More results](#) view: [All](#) | [New Releases](#) | [Coming Soon](#)

1.



[Don't Make Me Think!: A Common Sense Approach to Web Usability](#)

by Steve Krug

Publication Date: August 1, 2005

Our Price: £16.49 [Used & new](#) from £12.98[Add to Basket](#)[Add to Wish List](#) I Own It Not interested x|☆☆☆☆☆ Rate itRecommended because you added Prioritizing Web Usability to your Shopping Basket and more ([edit](#))

2.



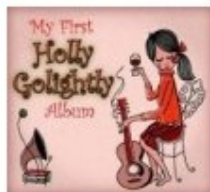
[Lava Ground](#)

~ I Wayne

Release Date: August 22, 2005

Our Price: £12.99 [Used & new](#) from £6.72[Add to Basket](#)[Add to Wish List](#) I Own It Not interested x|☆☆☆☆☆ Rate itRecommended because you added Universal to your Shopping Basket and more ([edit](#))

3.



[My First Holly Golightly Album](#)

~ Holly Golightly

Release Date: May 23, 2005

Our Price: £8.99 [Used & new](#) from £7.41[Add to Basket](#)[Add to Wish List](#) I Own It Not interested x|☆☆☆☆☆ Rate it

[Improve Your Recommendations](#)

Update your Amazon history to improve your recommendations

[Items you own](#)[Rated items](#)[Not Interested](#)

Need Help?

personalisation: a traditional approach

- operates in a closed world
- **the task supported is poorly defined**

can we personalise a very specific task?



Web Images Groups News Froogle [more »](#)

back pain treatment in milton keynes

Search

[Advanced Search](#)
[Preferences](#)

Search: the web pages from the UK

Web

Results 1 - 10 of about 233,000 for [back pain tr](#)

Beat [Back Pain](#) Today

Sponsored Link

[backinaction.co.uk](#) UK's leading web site and stores 1000's of products that work

[Outcome of general practitioner referrals to specialist outpatient ...](#)

Patients' mean consultation rate for **back pain** declined from 4.2 consultations per ... A study in **Milton Keynes** and the Oxford region. JR Coll Gen Pract. ...

[www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1371787](#) - [Similar pages](#)

[Musculoskeletal clinic in general practice: study of one year's ...](#)

Manipulation in **treatment** of low **back pain**: a multicentre study. ... A study in **Milton Keynes** and the Oxford region. JR Coll Gen Pract. ...

[www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1238758](#) - [Similar pages](#)

[Milton Keynes Fitness - Milton Keynes Sport - MKWeb](#)

Milton Keynes MK2 2AS ContactManager Mr R Blake Tel 01908 644444 **Milton Keynes** Sports Injury Clinic Provides **treatment** of sports injuries and **back pain** by ...

[www.mkweb.co.uk/sport/DisplayArticle.asp?ID=22303](#) - 32k - [Cached](#) - [Similar pages](#)

[Consultants Special Interests - Region: SE. Keyword: **back**](#)

back pain treatment, Consultant, Maidenhead (Private) Slough (NHS) ... **Back** surgery, Consultant, **Milton Keynes** (NHS/Private), Orthopaedics, **Back** surgery, ...

[www.specialistinfo.com/thget.php?t=t_rrsi&r=SEback](#) - 16k - [Cached](#) - [Similar pages](#)

[Consultants Special Interests - Region: . Keyword: **back**](#)

- irrelevant to the topic
- **irrelevant to me**

the nature of relevance

- topical relevance: **query** ↔ **pages**
- personal relevance: **my info need** ↔ **items**

a system for personalised relevance

“known person recommendation”

- **ask people I know and trust**
 - source-centric
 - allows for more complex reasoning
- **knowledge required**
 - who is known?
 - what’s the task/situation?
 - **who is most trusted?**

who is most trusted, and why?

...it depends on

- **five trust factors**
 - expertise, experience, impartiality, affinity, track record
- **the nature of the task**
 - how critical the task, how subjective the solution
- (Heath, Motta and Petre, 2006)

implementation

a system for personalised relevance

- domain: **travel/tourism**
 - non-critical, highly subjective
- **significant trust factors**
 - *affinity* between the info seeker and info source
 - *experience* of each person of particular domains
- **data requirements**
 - who do you know? (FOAF)
 - how trustworthy are they?
 - a pool of potential results

system components

- **reviewing/rating system, for “travel objects”**
 - provides pool of potential results
 - outputs RDF/XML according to Review vocab
- **trust kb, computes trust relationships:**
 - affinity
 - experience
- **search system**
 - search index
 - relevance reasoner

workflow

1. users provide FOAF files and ratings of travel things
2. system infers trust relationships
3. rated travel things are added to search index
4. user does keyword search
5. search system looks for results rated by known people
6. relevance reasoner ranks results based on inferred trustworthiness of the source

future work

- complete the implementation
- evaluate the importance of affinity vs experience in trust inferences
- evaluate the relevance of search these *personalised* results

thankyou

<http://kmi.open.ac.uk/people/tom>