Towards a Personalized Blog Site Recommendation System: a Collaborative Rating Approach

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The blogosphere

- A rich-in-semantics field of information
  - Many authors
  - A multitude of user-provided tags
  - High update rate
  - Time information attached to each post
  - An inherent connectivity between blogs and bloggers
  - Hyperlinks between posts, but also between bloggers (recommended blogs in the blog roll of a blogger)

Blogs

Monday Musette – San Sebastian and More…

Some fodder for your Monday:

1. Congratulations to Carlos Barredo for taking a terrific win in the Clasica San Sebastian on Saturday. In doing so, he made Quick Step relevant for the first time since April. This is the kind of win that starts new phases in riders' careers (Barredo's only 28). With a win like this under his belt, it will not be a surprise to see Carlos in the win column some more between now and the end of the season.

2. Yes, we too were disappointed to see Kreuziger lose. Are there any more doubts about this kid's talent? And is Filippo Pozatto this season's version of Michael "Bridesmaid" Boogerd?

3. Did anyone else notice the abundance of Flemish flags at the finish line in San Sebastian? No wonder a Quick Step rider won!

4. There was an interesting article in Friday's NY Times about the debate in Aspen surrounding whether or not to have a celebration in honor of its newest resident's 3rd place in the Tour. I'll let you form your own opinion, but it must be nice to live in a town where the biggest issue facing the mayor and city council involves planning a party.

5. Ryan at The Service Course explains how to start a rumor. Hmmm…this gives me an idea or two…

ABOUT ME

WSY
PHOENIXVILLE, PENNSYLVANIA, UNITED STATES

After several years racing domestically, I finally decided to give it a go overseas. Two years in Belgium were enough to prove to me that I was more suited to other things. But I stayed behind wheels so to speak--this time as an Assistant Director Sportif for Mercury-Viatel. Now I'm back stateside, happily married and feeling nostalgic for Northern Europe and its cycling traditions.

VIEW MY COMPLETE PROFILE

FAVORITE BLOGS

BIKEADELIC
Belgium Knee Warmers
Bianchista
Boulder Report
Competitive Cyclist: What's New

Link to a newspaper article

Link to a blog post

Link to an affiliated blog

Blogs

Hotel en San Sebastian-Donostia
www.hotelzaragozaplaza.com

viernes 4 de diciembre de 2009
Hotel en San Sebastián Sidreria Donostia

El Hotel Zaragoza Plaza le ofrece la oportunidad de disfrutar de una bonita estancia en el centro de la ciudad y conociendo el ambiente típico de una sidreria. La Sidrería Donostiarra esta situada en plena Parte Vieja, a pocos minutos a pie de nuestro hotel.
Nuestra oferta es la siguiente:

El paquete turístico incluye:
– 2 noches en habitación doble en régimen alojamiento y desayuno
– 2 menús sidreria
– iva incluído
Precio estancia: 185 euros
Para más información visite nuestra página web

Publicado por Pilar Legorburu en 0:03 0 comentarios

Etiquetas: sidreria dormir barato en donostia conciertos sleep saint sebastien hoteles san sebastian hoteles en san sebastian alojamiento san sebastian hotel en san sebastian hostales san sebastian

martes 24 de noviembre de 2009
Dormir barato en San Sebastián Concierto Mónica Naranjo

El próximo 15 de Enero visitará la ciudad Mónica Naranjo ofreciendo un concierto irrepetible con la Symphonic Film Orchestra de Madrid. , dentro de su gira Adagio.

Para los visitantes que vengan al concierto, el Hotel Zaragoza Plaza ha preparado una oferta especial: HABITACION DOBLE: 60 EUROS IVA Y DESAYUNO
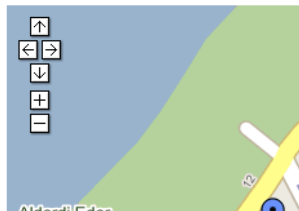INCLUIDO

Atención: Plan Renove -20%

http://www.hotelzaragozaplaza.com/ofertas.asp

LA BEHOBIA

000   00   00   00
DAYS   HRS   MIN   SEC
UNTIL LA BEHOBIA

Created by OnePlusYou

¡Bravo!
El Hotel Zaragoza Plaza ha sido calificado como "Excelente" por 9 viajeros
tripadvisor

Ubicación: en pleno centro, junto a la Concha

Link to a web site

Link to a web site

Link to a web site

Link to the same web site

At a glance

- Our work proposes a personalized recommendation model for bloggers that want to increase their blog roll

- A collaborative rating mechanism, which exploits the hyperlinks between blogs is developed

    Our model assumes that: *the intention of a blog owner who creates a link to another blog is to provide a recommendation to the blog readers and quantifies this intention in a local score for the blog being pointed*

- A set of implicit and explicit links between any two blogs affect the exchanged score

- The same model can be applied to other social networking applications, that use time information and implicit or explicit hyperlinks

Related work

- Yu and Singh, propose a reputation mechanism for social networks based on four properties of trust: symmetry, transitivity, self-reinforcement, propagation

- Kale et al (2007) introduce the concept of link polarity in order to distinguish between positive links that point to "like-minded" blogs, negative and neutral ones

- Massa and Avesani (2005) conclude that local trust metrics are preferable in a controversial environment such as the blogosphere. They introduce a trust threshold and a *transitivity horizon*

- The same authors (2004) introduce the notion of trust and collaboration in recommender systems and present a trust aware recommender system. In this system:
  - the decision of a user A for an item X is affected by the opinion of a user B in two ways: the explicit trust of A towards B and the implicit similarity between A and B, as denoted by their common interests (i.e. common ratings for the same items)

The model

- Blogosphere links' special features:
  - Difference between blogroll links, which denote a more permanent trust towards the blog being pointed, and post links, which represent a more transient reference to a blog
  - Timestamp information of a post, which can be employed as a timestamp for a hyperlink
- The personalized blog site recommendation system, exploits a decentralized and collaborative rating mechanism, which adaptively assigns scores to blogs based on the opinion of other blogs in the system

Hyperlink information

- a FOAF extension adds properties to the domain of foaf:Person and assigns a level of trust ranging from 0 to 1, to each blog in the blogroll

- The latest RSS version supports the Platform for Internet Content Selection (PICS) rating for channels. We suggest the enhancement of the item element with a postlink subelement comprising: *id, url, rating and lastupdated*
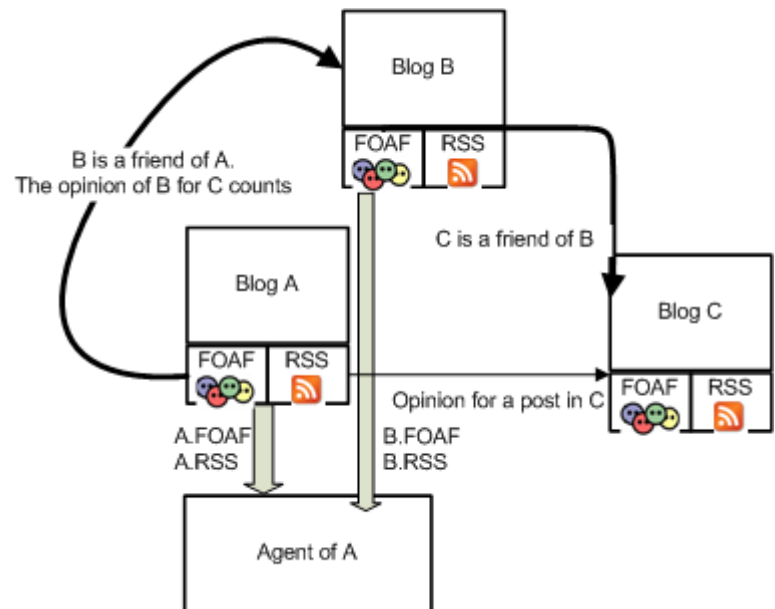
Local score

- What blog Bsj thinks of blog BSi at a certain period (ignoring all previous periods) is subject to the number of links towards BSi posts and to whether BSi is on BSj's blogroll

$$LSBSR_{t_p=k}^{BS_j}(BS_i) = w_{BR} \cdot BR_{t_p=k}^{BS_j}(BS_i) + w_{EP} \cdot EP_{t_p=k}^{BS_j}(BS_i)$$

- What blog BSj thinks of blog BSi at t_p=c is subject to what BSj thought of BSi for several periods before c

$$LABSR_{t_p=c}^{BS_j}(BS_i) = \sum_{\substack{k=c-n+1 \\ k>0}}^{c} w_{t_p=k} \cdot LSBSR_{t_p=k}^{BS_j}(BS_i)$$

- The more recent periods stronger affect the local score

Collaborative local score

- In order to estimate the rating of a target Blog Site *BSi,* the evaluator Blog Site *BSj needs to contact a set WBS* of *N witness Blog Sites (WBS   BS) in order to get* feedback reports on *BSi*

$$CLBSR_{t_p=c}^{BS_j}(BS_i) = w_{t_p=c}^{BS_j}(BS_j) \cdot LABSR_{t_p=c}^{BS_j}(BS_i)$$
$$+ \sum_{k=1, k \neq i}^{N} w_{t_p=c}^{BS_j}(BS_k) \cdot LABSR_{t_p=c}^{BS_j}(BS_i)$$

- Witness blogs may comprise the blogs in the blogroll of BSj (1st level neighbors) but also blogs in their blogrolls (2nd level neighbors) and so on…
- A maximum horizon of trust propagation should be defined, or else all blogs can act as witnesses

Experiments –Data set

- In the absence of an appropriate dataset for evaluation we used

- *Extended epinions dataset,* provided by Epinions and is available through the Trustlet wikipage (http://www.trustlet.org/wiki)

- 132,000 users who issued 841,372 statements user ratings
  - which users are trusted or distrusted (1, -1 respectively) by which users – Trust=1 is similar to blogroll (717,667 positive trust ratings)
  - article ratings (ranging from 1 to 6), which represent how much a certain user rates the review of another user – Similar to postlink

- The dataset contains information about the author and subject of each review, thus, giving us evidence on the interests of each author

- two subsets of equal size (*5,000 users)* that contain user:
  - with a short blogroll (setA: between 5 and 10 links) and
 - with an extended blogroll (setB: more than 10 links)

Experiments - Evaluation

- we generate for each user X (in each set) a list of recommended users, using the local accumulative (L) and the collaborative local (CL) formation

- We measure an average similarity between X and her top-K users recommended using (L) and (CL) and compare to the similarity (ratio of articles rated by X that have been also rated by Y) between X and the top-K users in her blogroll (BR)

Results

- Users with short blogroll are benefited the most

- Collaborative local rating improves results more than Local rating

- *A collaborative rating scheme is preferable for users with small blogrolls since can assist them in finding resources of interest*
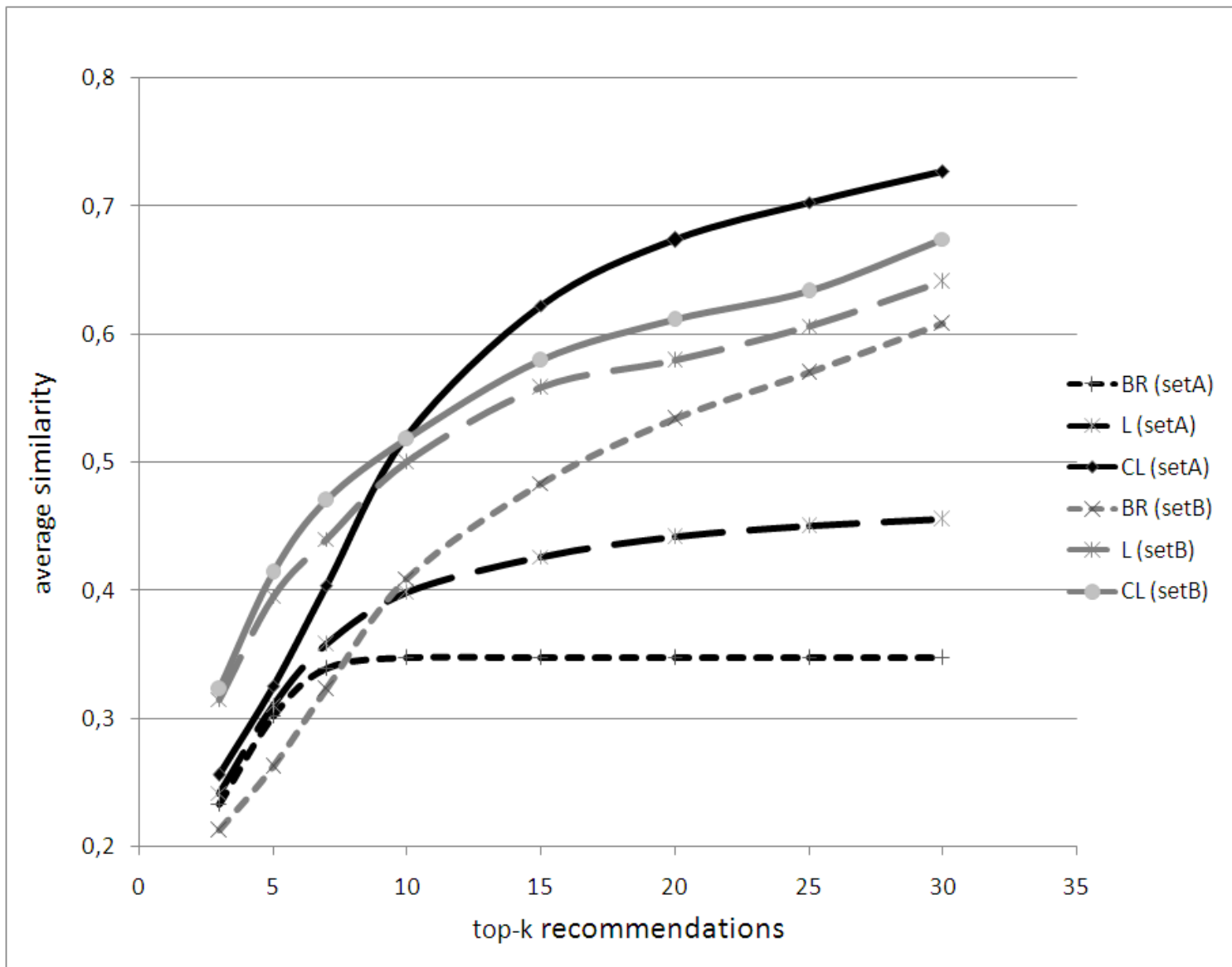
The average similarity values for the top-K matches (k=3,5,7,10,15,20,25,30)
for each subset (setA, setB) and method (*L, CL, BR)*

Conclusions and future work

- An iterative collaborative process to provide a local rating for a set of blogs using information from the blogroll and post hyperlinks

- The rating model is mathematically formulated to combine local accumulative and collaborative local scores and exploit timestamp and weight information of links

Next steps

- Study how propagation of trust and negative recommendation can be incorporated to the model

- Expand the mechanism to apply to other social networking applications such as twitter, product reviewing etc.

Thank you

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