Mobility and Social Networks in the Cloud

Laks V.S. Lakshmanan & Min Xie
University of British Columbia
Francesco Bonchi
Yahoo! Research

First Order of Business

- Fix the problem with the title!
  - Mobility & SN
- Three Reasons
  - I like down-to-earth things.
  - Makes for a nice new buzzword – MOCIAL = MObility + soCIAL!
  - At the moment, I don't have too many intelligent things to say about the trio.
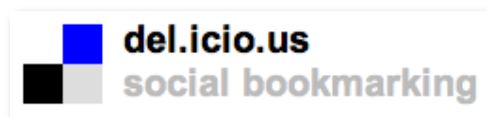- Focus on Applications and Challenges.

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About Existing Mocial Services

- Increasing #people using (smart) mobile devices

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About Existing Mocial Services

- Adoption and use of SN on the rise.

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A Special Case -- Location-based Services

- Location-based traffic reports:
  - **_Agg query:_** Expected congestion level on a route?
  - **_Shortest path query_**: Estimated travel time to reach my destination?

- Location-based restaurant finder:
  - **_Range query:_** What are the restaurants within five miles of my current location
  - **_Nearest-neighbor query_**: Where is my nearest fast (junk) food restaurant

- Location-based advertisement:
  - **_Range query:_** Send E-coupons to all customers within five miles of my store

Limitations of Current Services

- Google Latitude:
  - Share your location w/ friends; find friends' location checkins.
  - Don't know what they are up to or are in the mood for: can't plan activities short of opening a gchat.

- Foursquare:
  - More feature rich; see friends' locations, tips, what they have been up to; filter based on predefined catalog (e.g., restaurant, beach etc).
  - Recommendations based on checkin histories, trending places etc.
  - No search; no planning.

Our Vision

- I'm traveling; want to find new gaming partners to play certain roles, with compatible interests, socially close to me.

- Filter user's activity trail based on topic, time, location, and social distance: e.g., just landed in Arlington, find friends to have a coffee/chat with, a good cafe nearby, and a time.

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Vision (contd.)

- Activity/Event Planning: On a business trip to NYC; organize group jogging in the Central Park or beer party with friends or ...
  - **Topic** (not canned)
  - **Location** (not just yours)
  - **Time** (not just the current time)
  - **Social** Distance, compatibility, interests etc.

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Social Event Planning

- Organize a group hiking trip up one of the mountains in Vancouver with socially close people with compatible interests in one of the weekends in March.
  - Vague and loose spec.
  - Soft constraints.
  - →*Event template*

  Challenges: Evolution, Matching, Protocol, Ranking, Recommendation, even dual recommendation.

Challenges of Mocial

- Facilitate Search and Recommendations leveraging all four dimensions seamlessly.
- Schema free querying.
- Search and Recs woven together.
- Dual Recs.
- Powerful and personalized filtering to minimize info overload and conserve battery power.

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After Mocial takes off …

- Jim Clifton, *The Coming Jobs War:* "My big conclusion from reviewing Gallup's polling on what the world is thinking on pretty much everything is that the next 30 years won't be led by U.S. political or military force. …"

- Gallup did (still doing) this world poll to learn what the world is thinking.

- The activity trail left by users – a wealth of info on what everyone's *thinking* about.

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And Finally, the Cloud (Maybe)

- Valuable data for learning about social "influence" -- perhaps the analysis can happen in the cloud

- Cloud can take charge of providing the various kinds of functionality –- search, filter, recs etc.

- Privacy is a huge issue.