Privacy and Security in Online Social Media (PSOSM)

Oct 4, 2012
At WoSC, IITKGP

Ponnurangam Kumaraguru ("PK")

Assistant Professor

Hemant Bharat Ram Faculty Research Fellow

Who am I?

- Assistant Professor, IIIT-Delhi
- Ph.D. from School of Computer Science, Carnegie Mellon University
- Research interests
  - Privacy and Security in Online Social Media, Cyber crime, Usable security, Privacy
- Co-ordinate and manage PreCog, precog.iiitd.edu.in
- Courses that I teach @ IIITD
  - Research methods / Advanced research methods
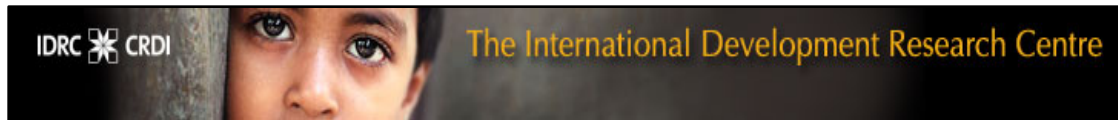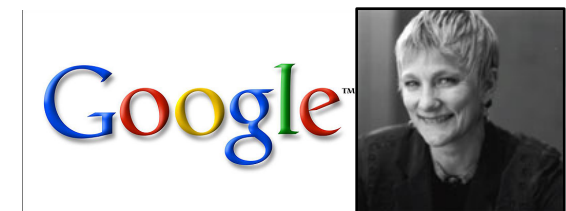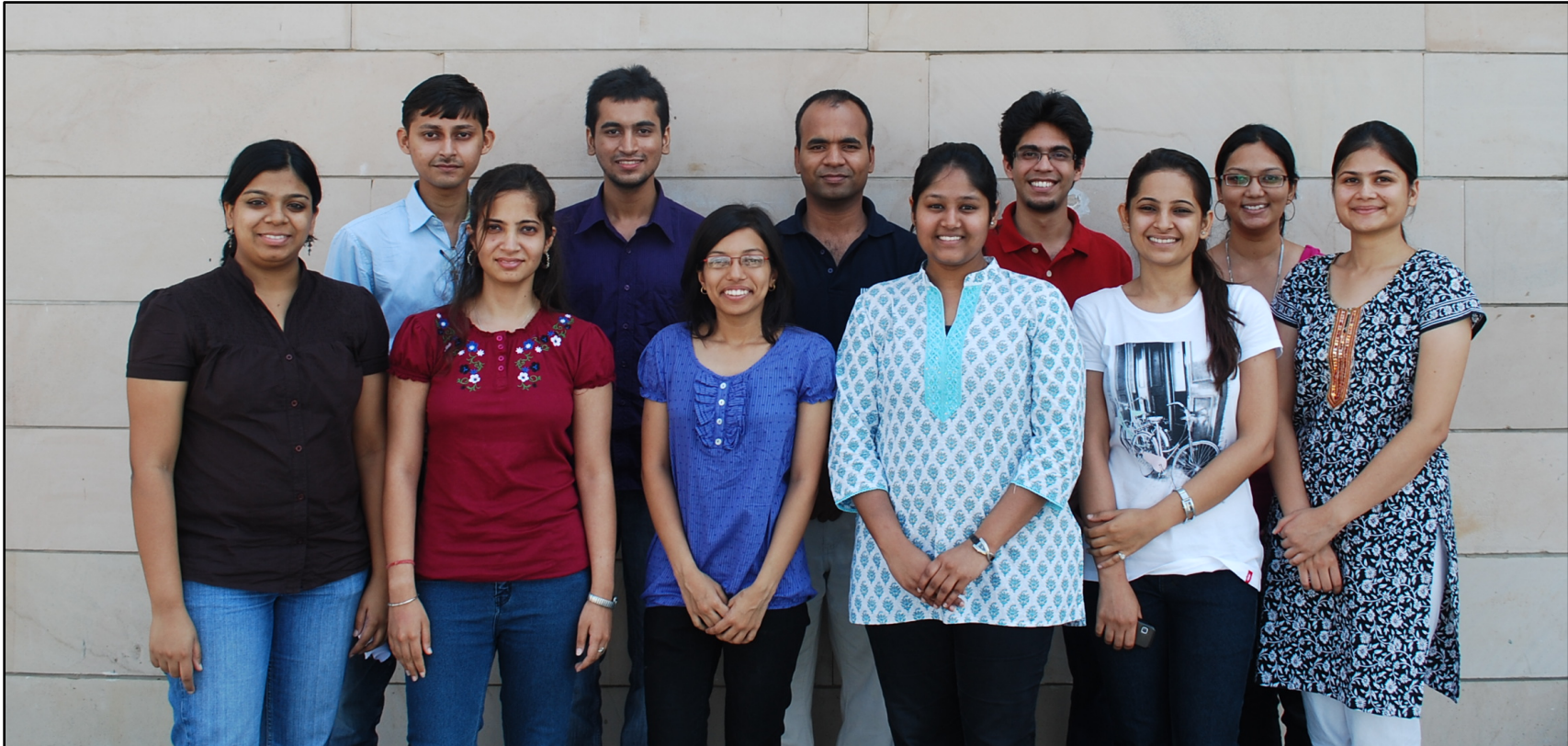 - Foundations of Computer Security
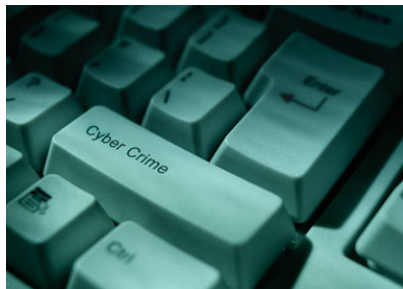
Suported by

Government of India

Indo-Brazil Science Council

PreCogs

Research Areas

- Privacy and Security in Online Social Media
- Cyber crime
- Privacy
- Usable security

Phishing
Digital Footprints
Early Warning Systems
Security Crisis Management Facebook
Credibility Online Social Media Twitter
Privacy Perceptions Youtube Android Privacy
Information Diffusion Mobile
IVRs Usable Security Email-sharing
Captcha's SMS Spam

twitter Digest

U2P2
Understanding User
Privacy Perceptions

OntoX
Ontology for extremism

PhishAri

ChaMAILeon
Simplified email sharing like never before!

Anti-Phishing Phil   PhishGuru   SMSAssassin

Collaborators

Alumni

What will I cover today?
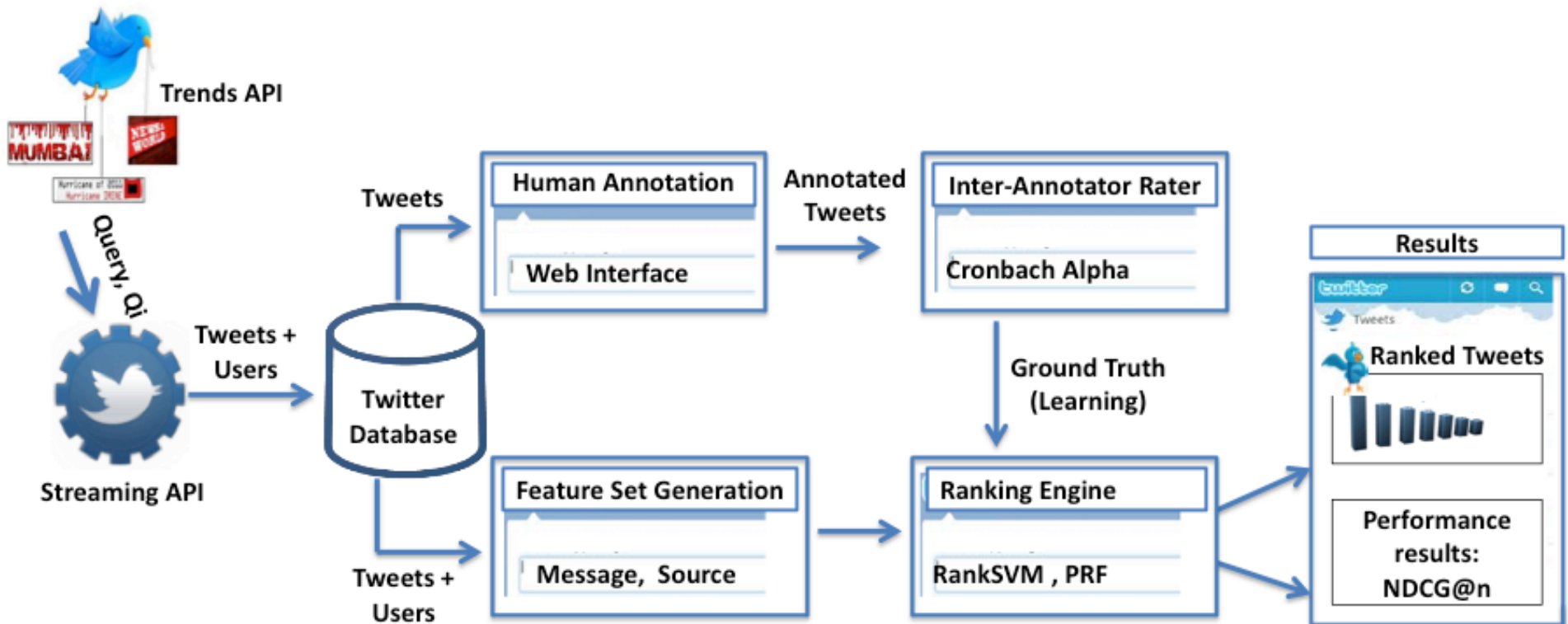
twit-digest

PhishAri

MIOSphere
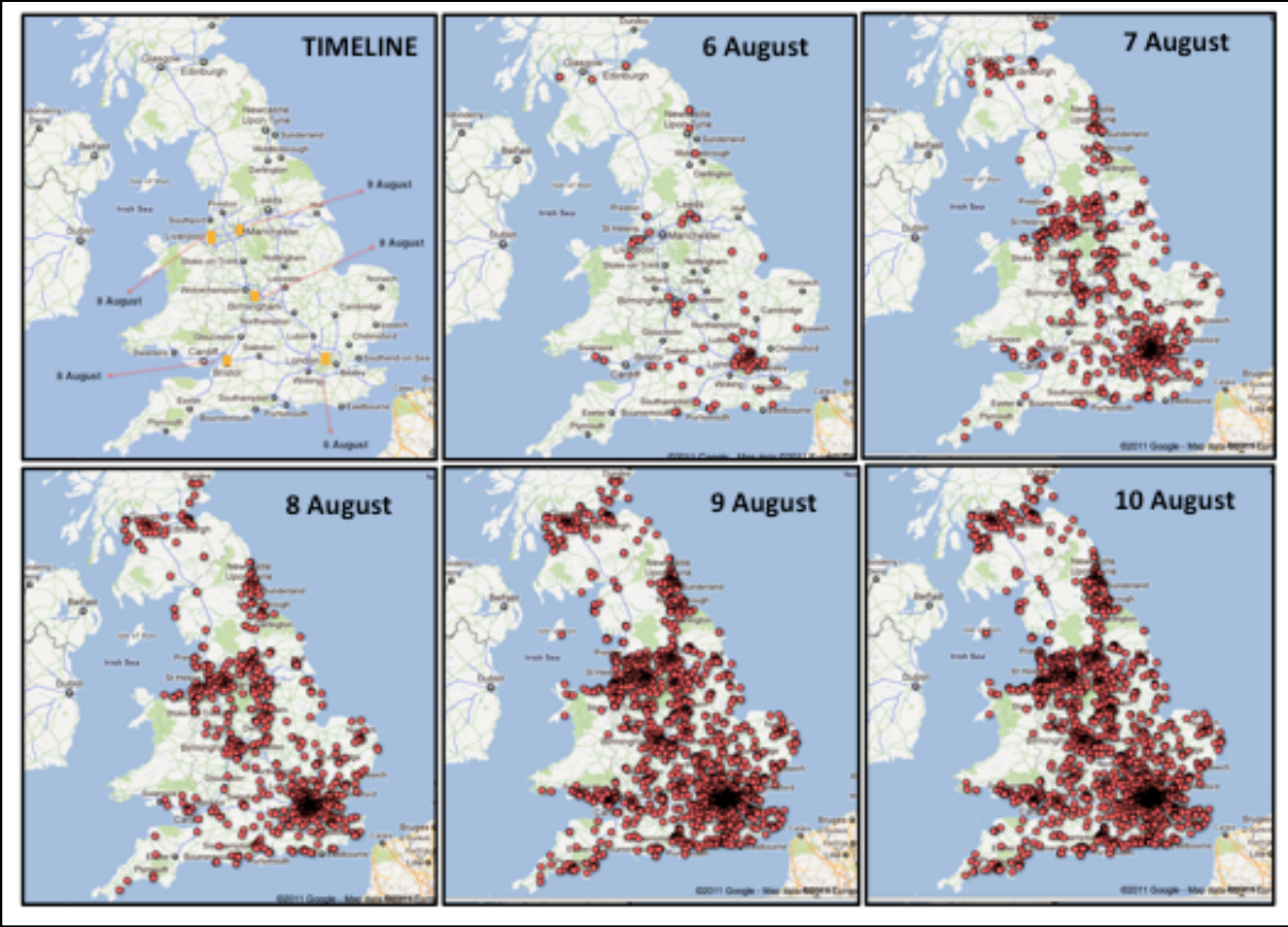
What are we trying to do?

- Characterize how Twitter is being used during crisis events
- Find credibility of information, in particular during high impact global events
  - Misinformation can be critical
  - Find influential users
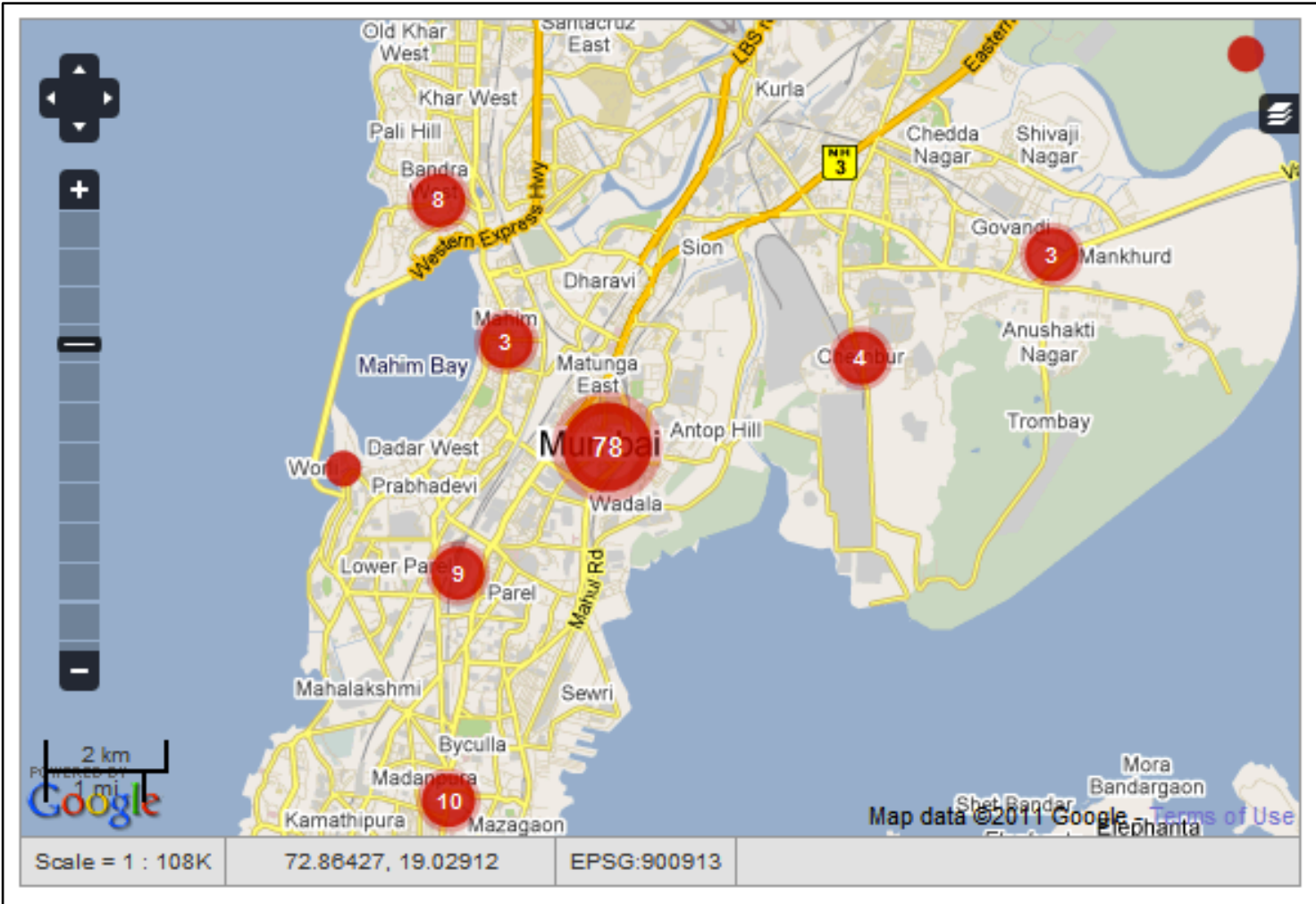- Build web-portal to analyze Twitter data real-time
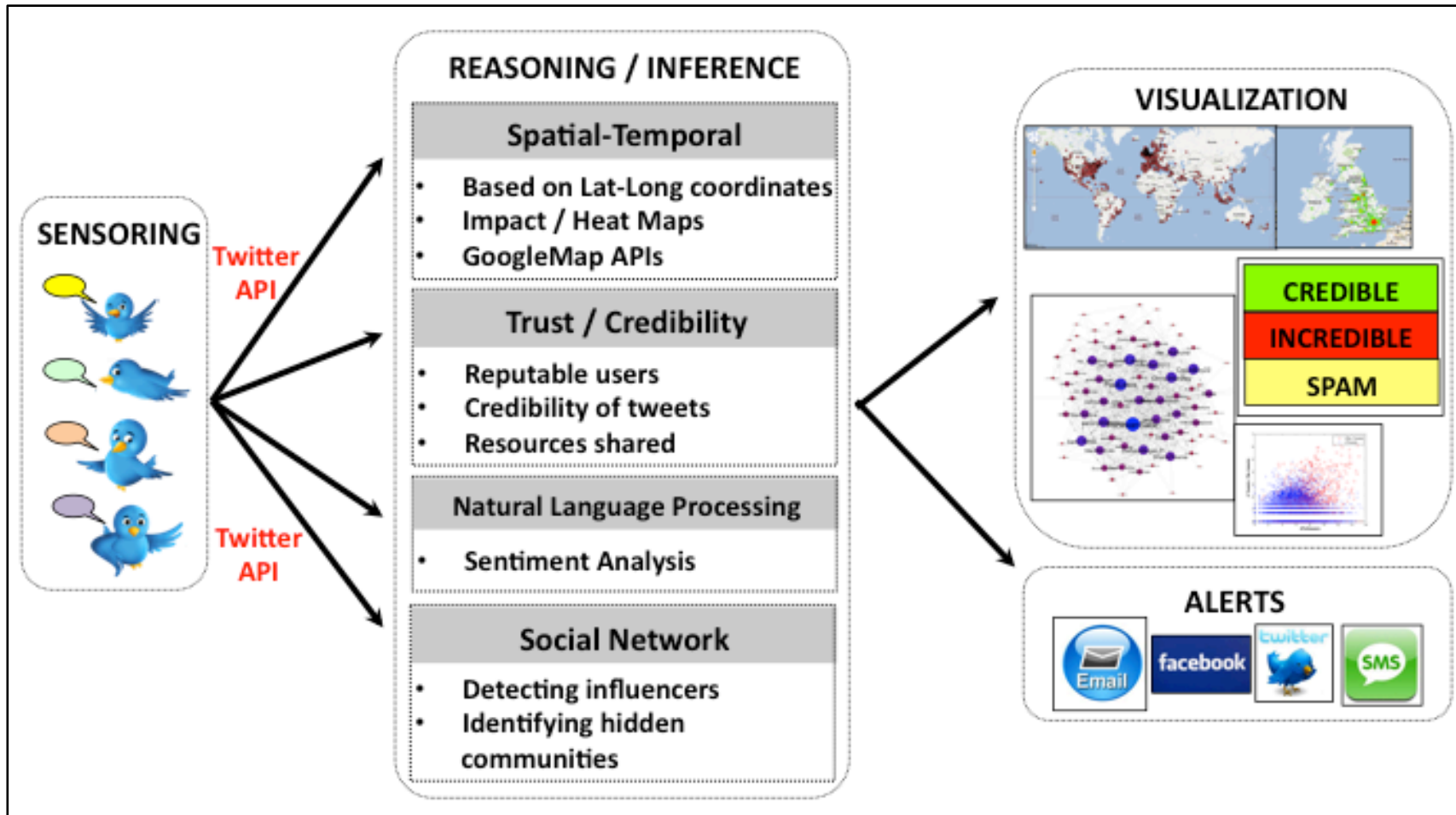
Architecture

England Riots

Mumbai blasts

What we are building?

Relevant publications

- Gupta, A., and Kumaraguru, P. Credibility ranking of tweets during high impact events. In Proceedings of the 1st Workshop on Privacy and Security in Online Social Media (PSOSM), In conjunction with WWW'12. http://precog.iiitd.edu.in/Publications_files/a2-gupta.pdf

- Gupta, A., Joshi, A., and Kumaraguru, P. Identifying and Characterizing User Communities on Twitter during Crisis Events. Workshop on Data-driven User Behavioral Modelling and Mining from Social Media, Co-located with CIKM (2012). http://precog.iiitd.edu.in/Publications_files/ag_umsocial_2012.pdf

Demo

- http://precog.iiitd.edu.in/Twit-Digest

- Features:
  - Spam and Phishing detection
  - Credibility scoring
  - Sentiment scoring
  - Social network graph
  - Geo-location analysis
  - Tag cloud of hashtags
  - Popular URLs identification
  - …….

- Detection of Phishing on Twitter

- To prevent fraud on online social media like Twitter caused due to Phishing

- USD 520 Million worldwide loss, 43% Online Social Media users attacked by phishing
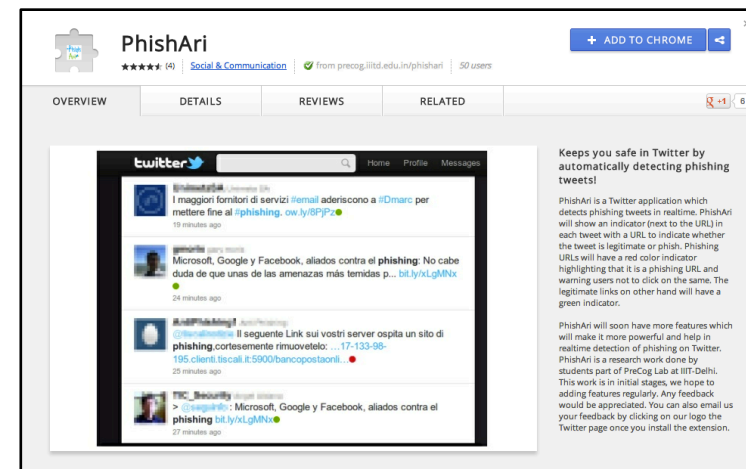
Relevant publications

- Chhabra, S., Aggarwal, A., Benevenuto, F., and Kumaraguru, P. Phi.sh/$oCiaL: The Phishing Landscape through Short URLs. In 8th Annual Collaboration, Electronic messaging, Anti-Abuse and Spam Conference (CEAS 2011). Best Paper Award. http://precog.iiitd.edu.in/Publications_files/SC_AA_FB_PK_CEAS2011.pdf

- Aggarwal, A., Rajadesingan, A., and Kumaraguru, P. PhishAri: Automatic Realtime Phishing Detection on Twitter. Accepted at APWG eCrime Researchers Summit (eCRS 2012).

Demo

- On Chrome https://chrome.google.com/webstore/detail/pheokmlohglcpigbnbenbimcombeoolm

- URLs anywhere in Twitter
  - Twitter timeline
  - Search results
  - Profile
  - Direct messages

MIOSphere

- Develop a system to monitor information in OSM

- Provide OSM users a better way to understand the impact caused by the content they have shared

- Live Demo at:

  http://miosphere.speed.dcc.ufmg.br/

Three specific examples

- http://miosphere.speed.dcc.ufmg.br/memes/url/960947/

- http://miosphere.speed.dcc.ufmg.br/memes/url/1062165/

- http://miosphere.speed.dcc.ufmg.br/memes/url/1054417/

Relevant publications

- Jain, P., Rodrigues, T., Magno, G., Kumaraguru, P., and Almeida, V. Cross-pollination of information in online social media: A case study on popular social networks. In Third International Conference on Social Computing (2011). http://precog.iiitd.edu.in/ Publications_files/ PJ_TR_PK_VA_SocialCom_2011.pdf

- Rodrigues, T., Benevenuto, F., Cha, M., Gummadi, K. P., and Almeida, V. On word-of-mouth web based discovery of the web. International Measurements Conference (IMC) (2011). http://conferences.sigcomm.org/imc/ 2011/docs/p381.pdf

Thank you

Thank you!

pk@iiitd.ac.in
precog.iiitd.edu.in