



City - ware

Vassilis Kostakos
Human-Computer Interaction Group
Department of Computer Science
University of Bath

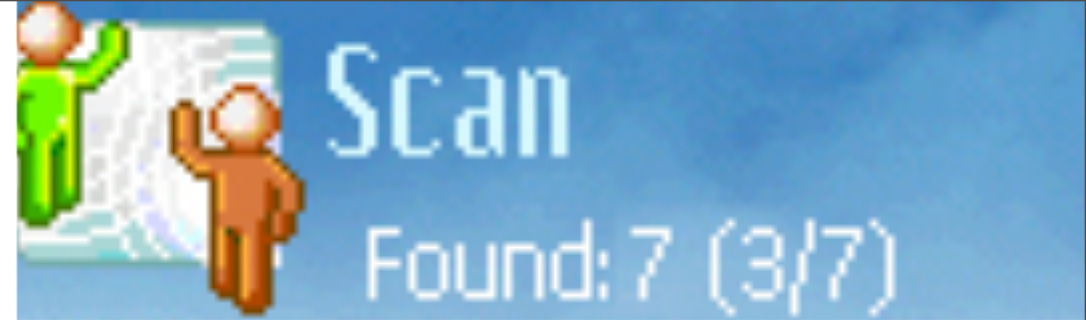
Please switch on your Bluetooth

Overview


- Technology, the city & people!
- How to think of city-ware
- Dark scenarios
- Interesting questions - interesting solutions
- Cityware for Facebook

Nokia Sensor


- “See and be seen”
- Local peer-to-peer profile searching



Scan
Found: 7 (3/7)



Santa Cat
My roommate helps Santa during Christmas



Tall blond
Hello world!
Send me Ser messages...

tions

Clo



**MOBILEDATINGSOFTWARE.COM
& www.bluedating.info**

Bluedating

Find your soul-mate right next to
you!

Bluetella

- Peer to peer file sharing
- File forwarding over clients



Wireless Rope

- See people nearby
- “Rope” your friends so you don’t get lost in a crowd





Jabberwocky

Meet familiar strangers
“Urban atmospheres” project

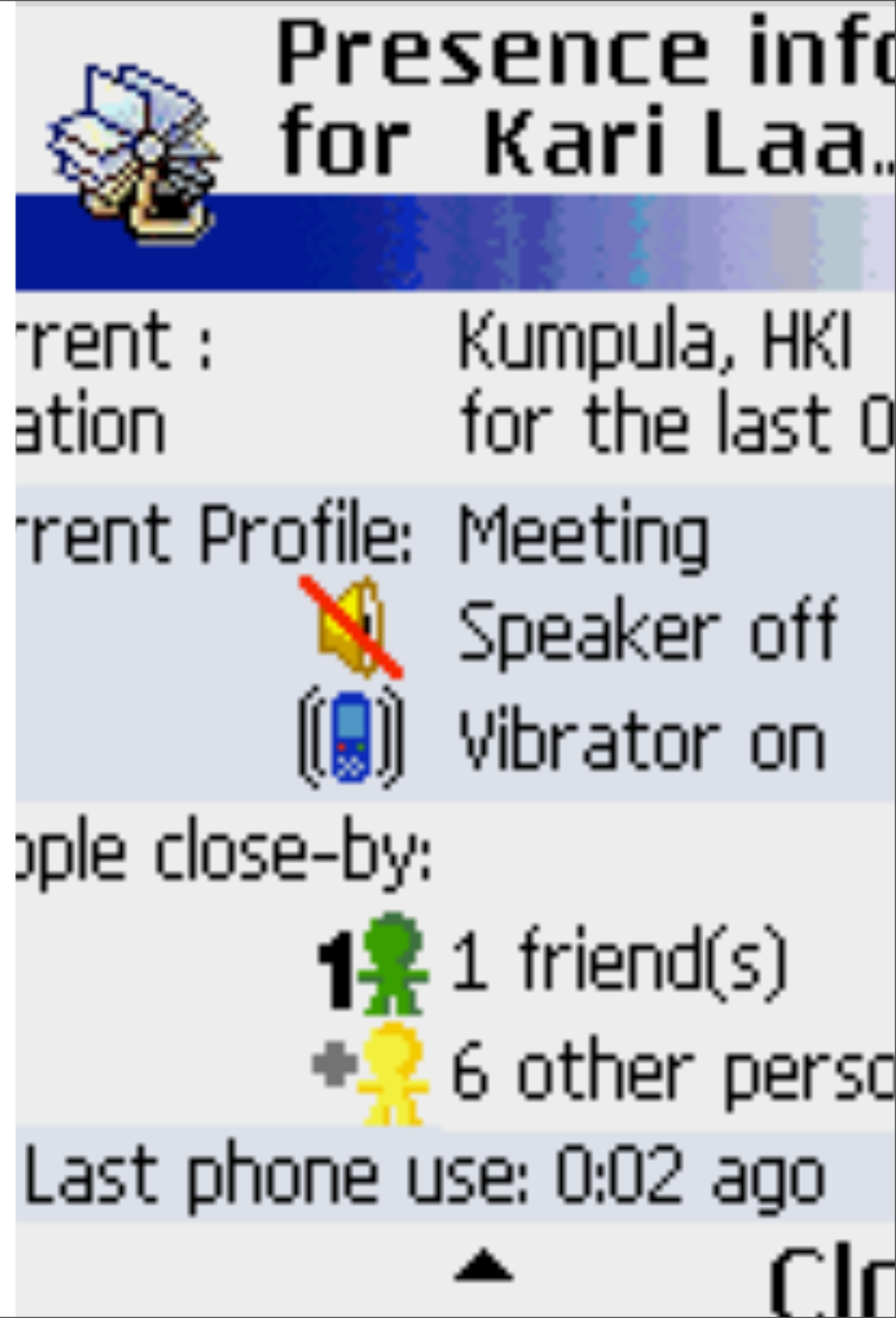


Telelogs

Listen to familiar strangers' audio blogs

ContextPhone

- Context aware
- Instant messenger
- Communicates over network / bluetooth

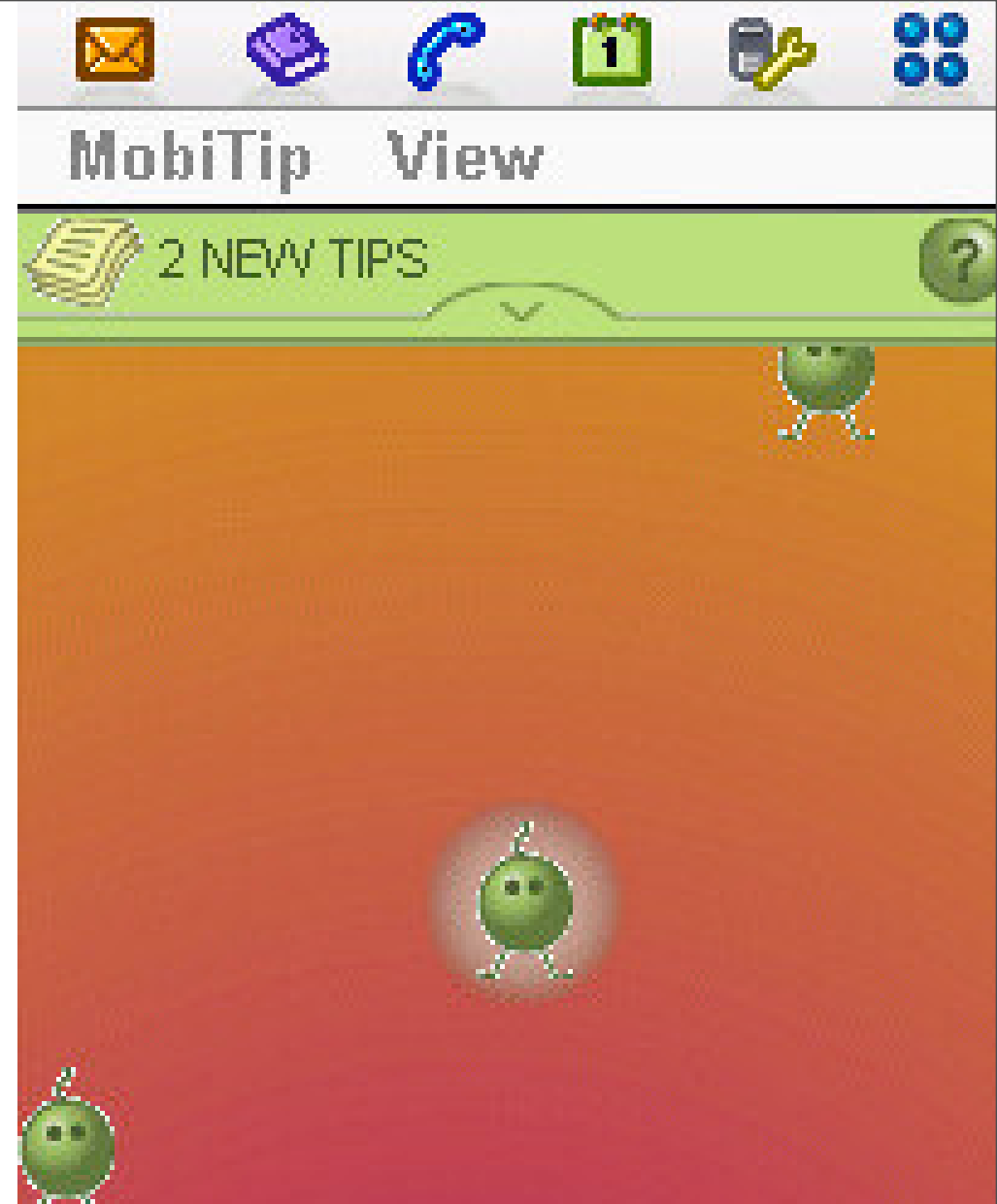


decoy



Decoy

An invisible poster, graffiti or a direction sign which gets alive by the mobile in the pocket



MobiTip

Location-based tips about
restaurants, shops, etc.



You-Who

Question-and-answer game to
meet strangers

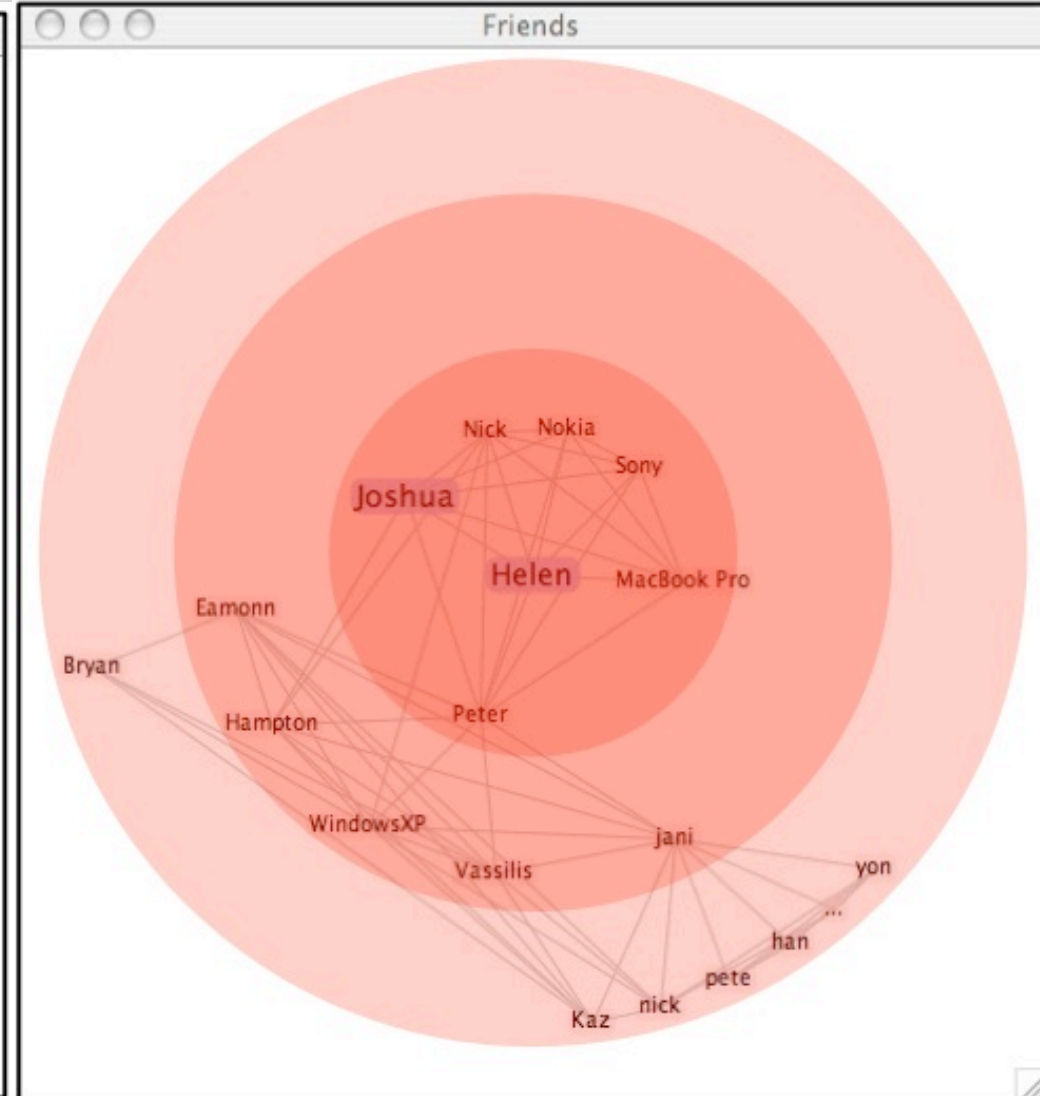
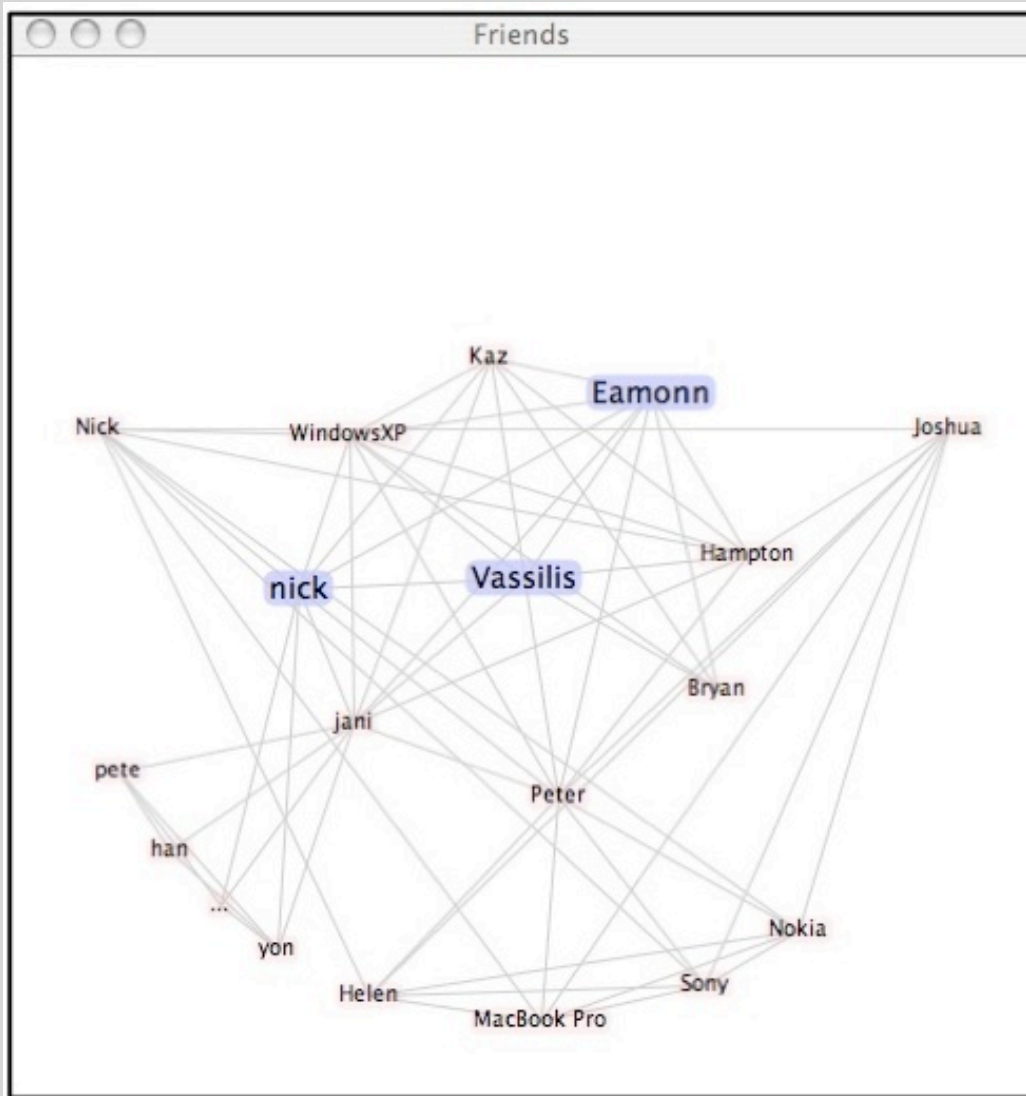




Bluefish

Each person has a fish

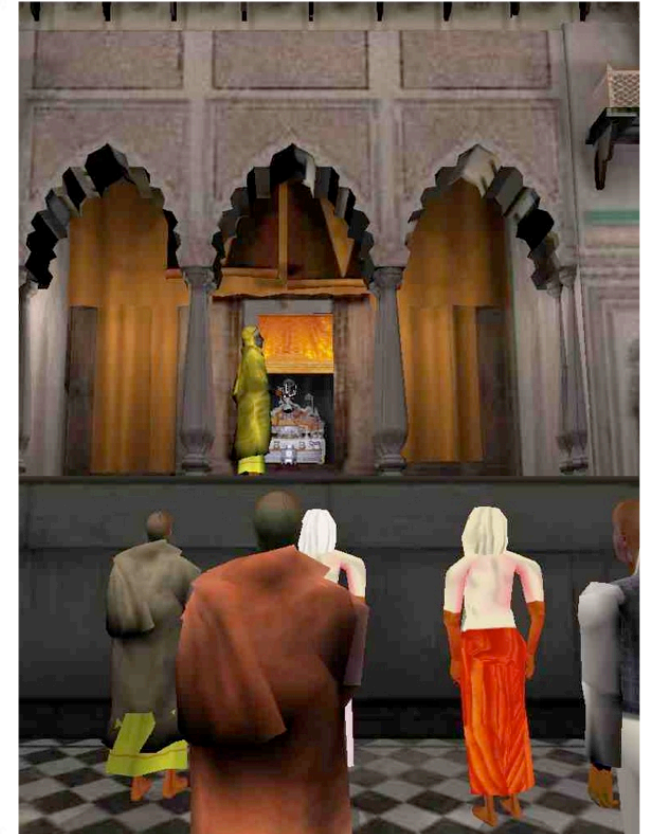




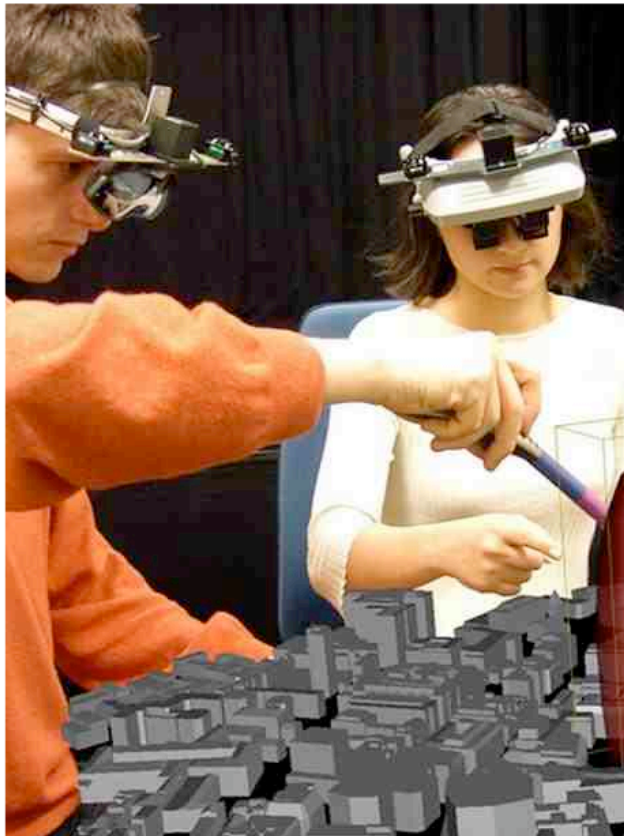
Friend of a friend

Explore your community

How to think about city-ware



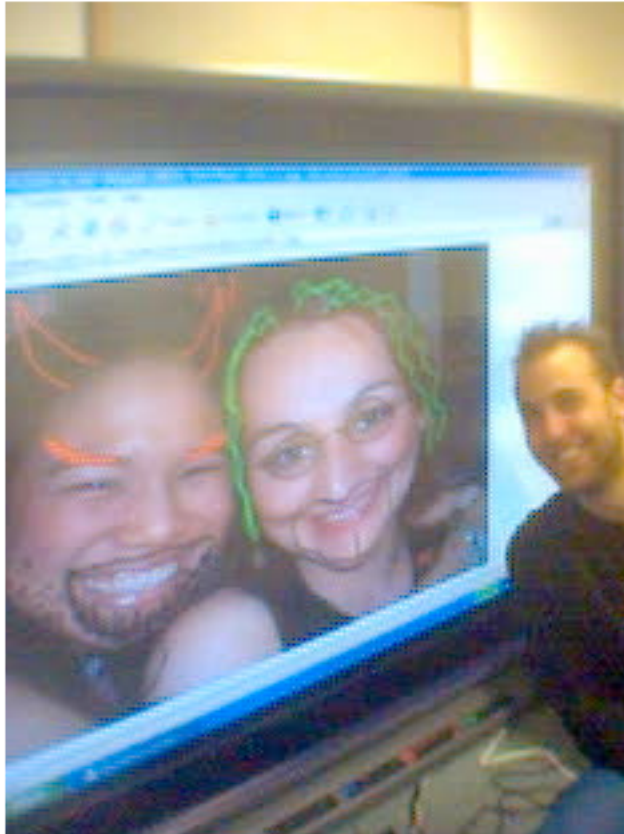
Virtual reality?



Augmented reality?



Wearable computing?



Pervasive computing?



Pervasive computing

Location

Technology

Information

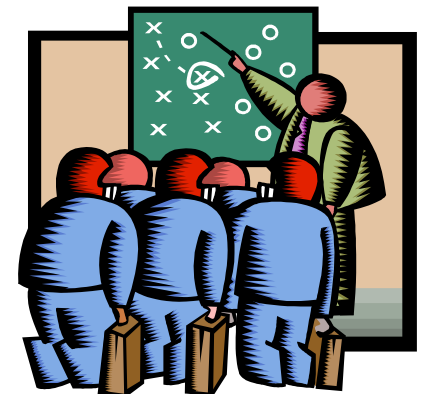
Private Space



Private Interaction Space



Social Space



Public Space



Public Interaction Space



Dark scenarios

Interesting problems
Interesting solutions

Who is using this device/service?

Extending TCP/IP protocol with biometric information gathered where physical interaction naturally takes place.

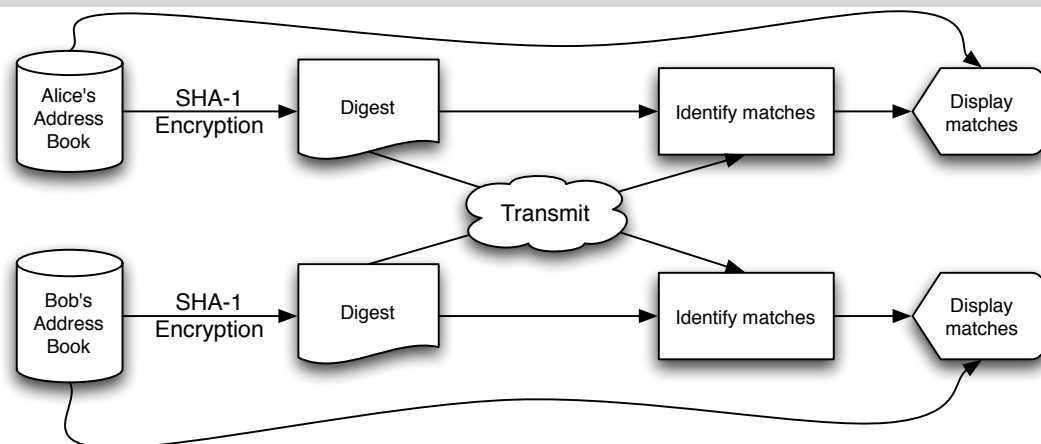
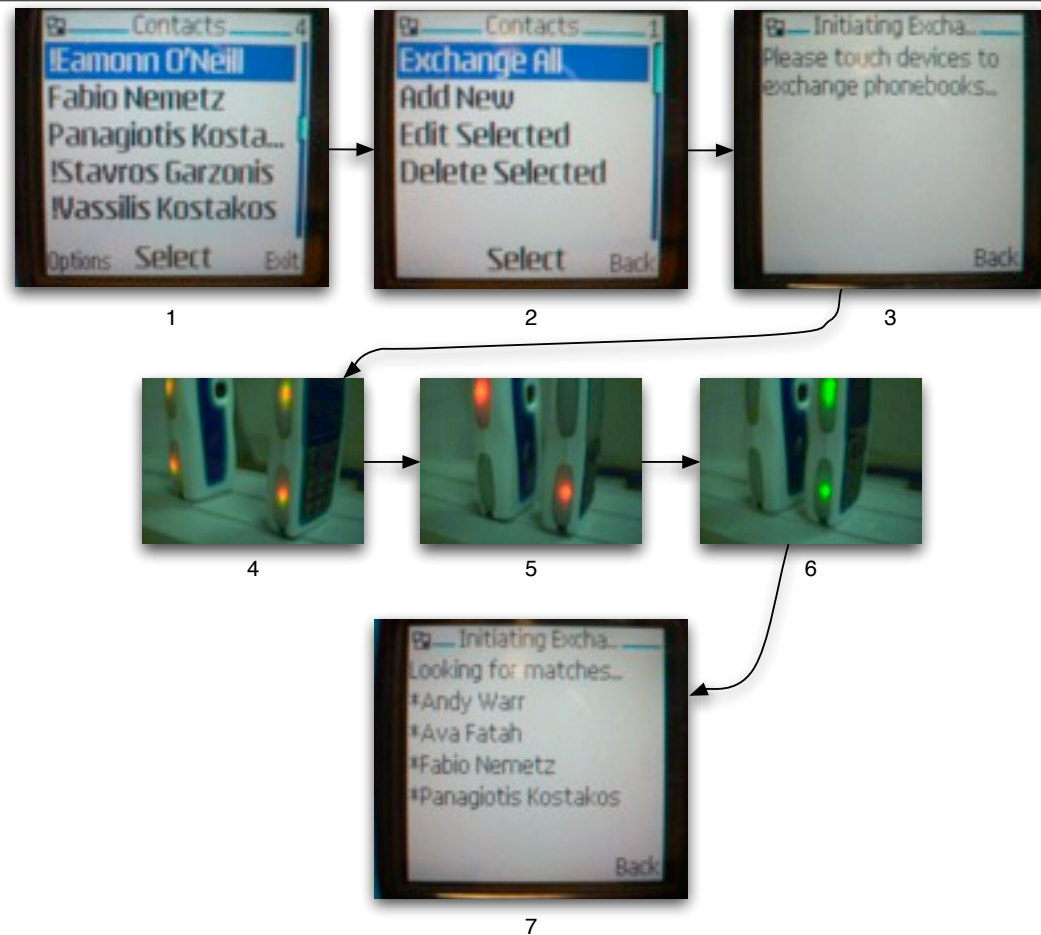
Presented at UkUbinet, Cambridge, 2003



Who am I interacting with?

Private matching algorithm for ad-hoc peer to peer communication.

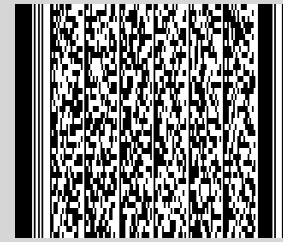
Presented at LoCA, IBM Dublin, 2006



What am I interacting with?

Using physical tokens from the environment to verify the service or device you are communicating with. (NFC, RFID, sound, photo).

(In progress)



Still not convinced?



VK Home

Photography

Google docs

ODEON - Bath

Tube map

Mac Wallpapers

MacResearch

NBG

ACM



BBC NEWS | Technology | Bl...

BBC

[Home](#)[News](#)[Sport](#)[Radio](#)[TV](#)[Weather](#)[Languages](#)[Search](#)[UK version](#) [International version](#) | [About the versions](#)[Low graphics](#) | [Accessibility help](#)BBC
NEWS[WATCH](#) One-Minute World News**News services**
Your news when you
want it

News Front Page

[Africa](#)[Americas](#)[Asia-Pacific](#)[Europe](#)[Middle East](#)[South Asia](#)[UK](#)[Business](#)[Health](#)[Science/Nature](#)[Technology](#)[Entertainment](#)
[Also in the news](#)[Video and Audio](#)[Have Your Say](#)[In Pictures](#)[Country Profiles](#)

Last Updated: Thursday, 16 August 2007, 14:37 GMT 15:37 UK

[E-mail this to a friend](#)[Printable version](#)

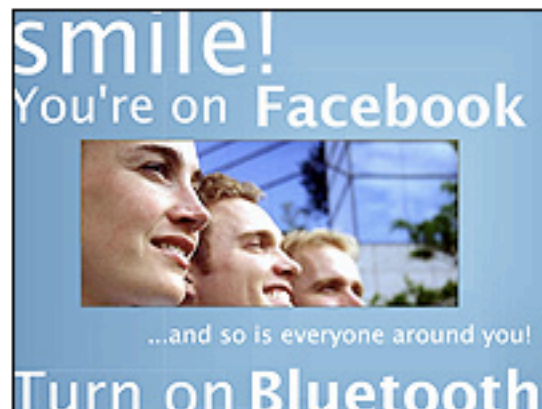
Bluetooth helps Facebook friends

A team of UK researchers is combining the power of social network Facebook with communications tool Bluetooth to learn more about human interactions.

Bath University scientists have created a tool which can use the unique ID of Bluetooth devices, like a mobile phone, to build new friendship networks.

Users register with the Facebook tool, called Cityware, that tracks encounters in the real world via Bluetooth.

It is part of a wider project backed by Nokia, HP Labs and Vodafone.



Cityware nodes have been set up in Bath and London

SEE ALSO

- ▶ [Using Bluetooth](#)
07 Mar 07 | [School Report](#)
- ▶ [Art project tracks Bluetooth users](#)
22 May 07 | [Technology](#)
- ▶ [Legal fight over Bluetooth chips](#)
04 Jan 07 | [Technology](#)

RELATED INTERNET LINKS

- ▶ [Cityware](#)
- ▶ [About Cityware on Facebook \(requires registration\)](#)

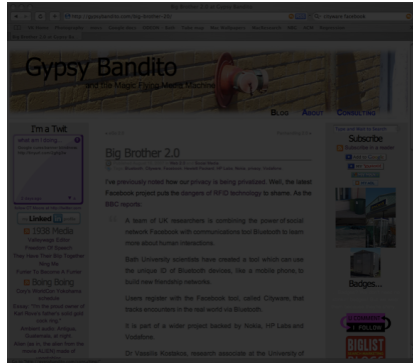
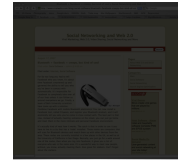
The BBC is not responsible for the content of external internet sites

TOP TECHNOLOGY STORIES

- ▶ [Legal threats halt iPhone crack](#)
- ▶ [Apollo Moon photos reveal detail](#)
- ▶ [Yahoo plea over China rights case](#)

[News feeds](#)

MOST POPULAR STORIES NOW



Bluetooth + facebook = creepy, but kind of cool

Computer Software News

Software news, freeware and shareware computer software, free downloads for Windows and Linux

Bluetooth + facebook = creepy, but kind of cool

Filed under: Internet, Social Software

For far too long you had to tell Facebook who you know. It's about time Facebook smartened up and gamered the ability to tell you who you've been in contact with automatically. It's impossible for Facebook to completely take over all of our lives unless it can follow us around everywhere we go. Finally, a team of Bath University scientists have come up with a solution. Combine Facebook with mobile Bluetooth electronics! You can now install a Facebook tool, called Cityware, and register your Bluetooth product, and it will atomically tell you who you've come in close contact with. The best part is that now, instead of actually meeting someone on the street, you can just go home and meet them in the more intimate and personal Facebook environment.

It's actually kind of neat how it works. The catch is that in order to use it you have to live in a city that has a 'node' installed. These nodes are computers that will scan for Bluetooth devices and match them up with other devices from the area. These nodes are currently installed in a few places in the UK, as well as at the University of California in San Diego. Basically, you just go for a walk around one of the nodes, then when you log into Facebook, it gives you a list of everyone who was in the same area. It's a wonderful way to meet new people, without, you know, actually meeting them. Also great for stalkers. Can't forget about the stalkers.

Read | Permalink | Email this | Comments

photo by moogs

Printed on August 18, 2007

Hottest Blogs:

Hardware Blog

World Software Headlines

Software Online Guide

Technology News Blog

Electronics Blog

Hardware News and Reviews

Recent Posts:

Max Headroom in your RSS reader

Google celebrates its first year of WiFi

iConcertCal - Let iTunes fill your social calendar

Ask The Readers: How Do You Measure Productivity at Work?

Mind Hacks: Get a Better Night's Sleep Without Electronic Media

Craigslis: The Key to Landing a Job

Distraction: Laptops in Meetings a Double-Edged Sword

Announcements: Introducing Guest Editor Tamar Weinberg

Social Networking: Facebook Etiquette

HOT NEWS! Yahoo! Mail now offers free text messaging to mobile phone numbers

Virtualization: Windows-on-Mac virtualization software Parallels --

Writing: Use SpellJax to check your spelling online

Financial: How much are you worth?

Lonely? Get some keyboard characters to keep you company

Back up your Firefox settings with MozBackup

Announcements: Lifehacker OZ Goes Live!

Household: Find the Right Glue for the Job at This to That

Personal Relationships: Confident Body Language

Igoogle: Capture Where Your Time Goes with the Activity Tracker Gadget

Fifteen Web sites to surf when you should be working

Are You Ready For Some Football?: PC World reports that fantasy football is ...

Acer buys Gateway, market share

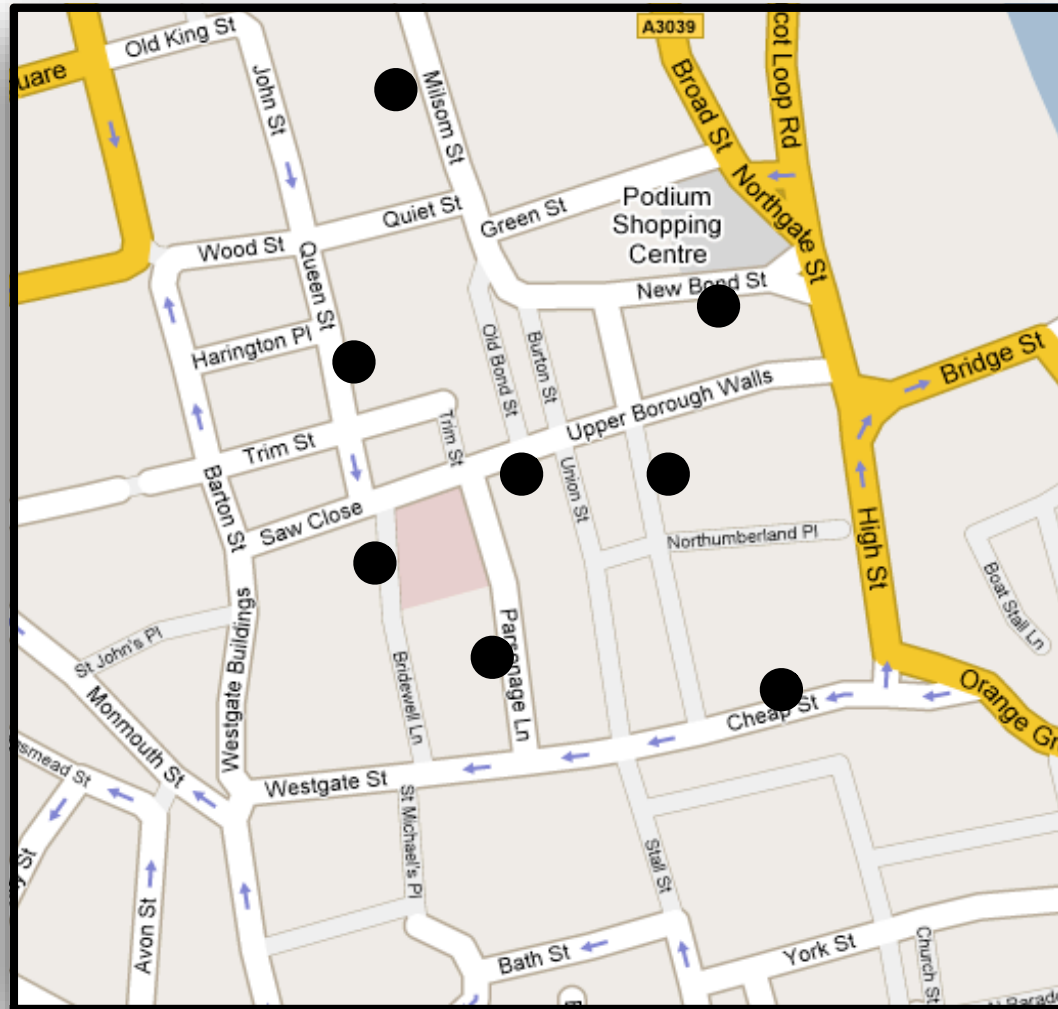
DIY: A Beginner's Guide to Soldering

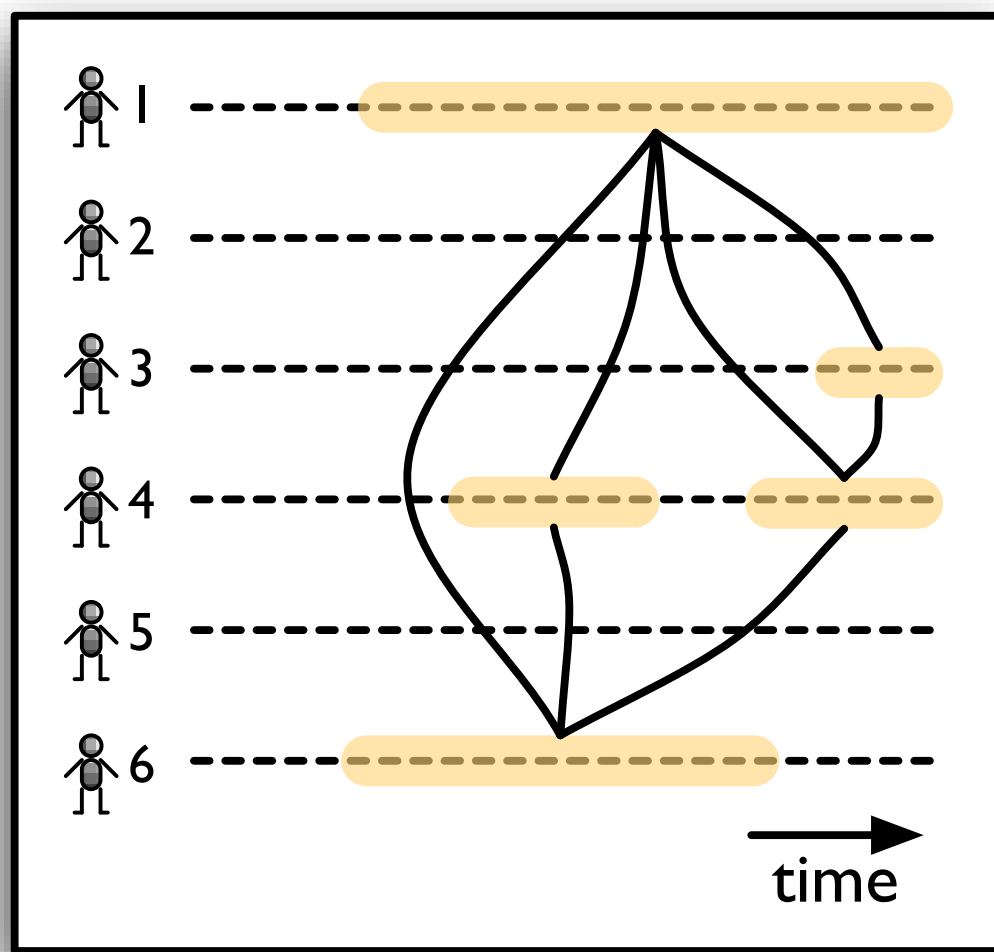
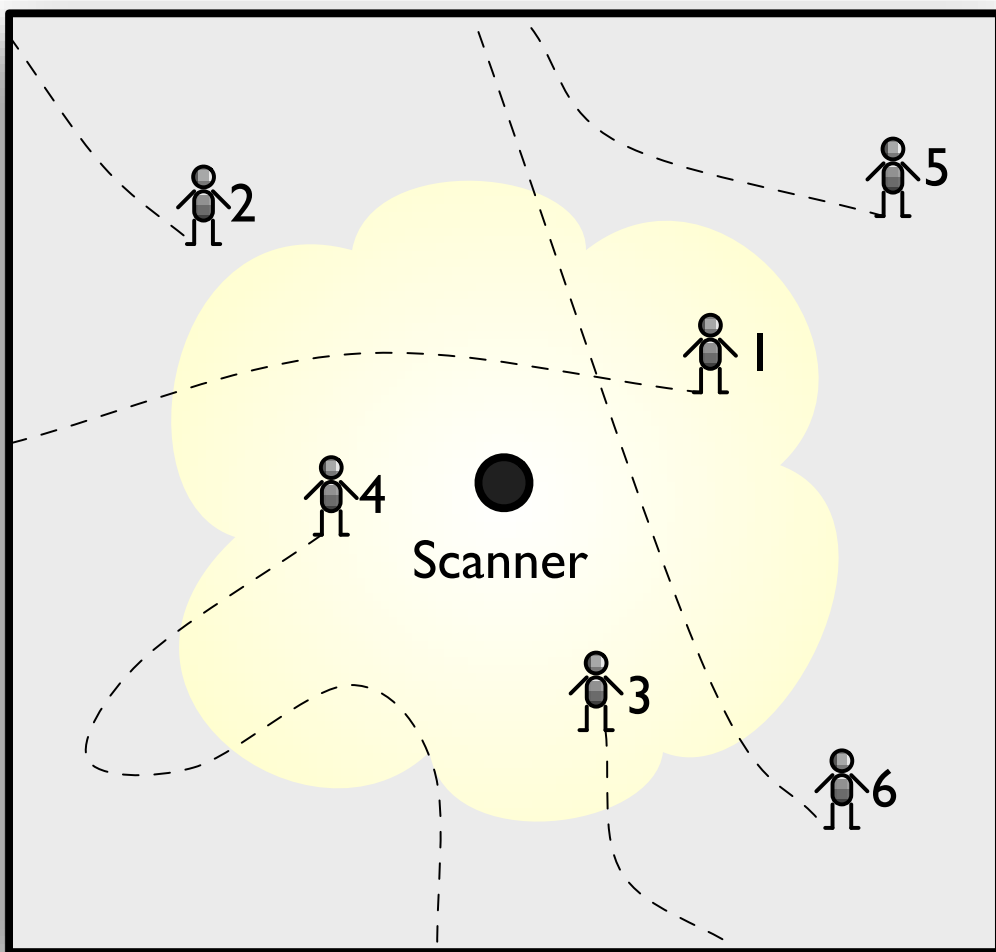
Google Maps: Now With More Embedding

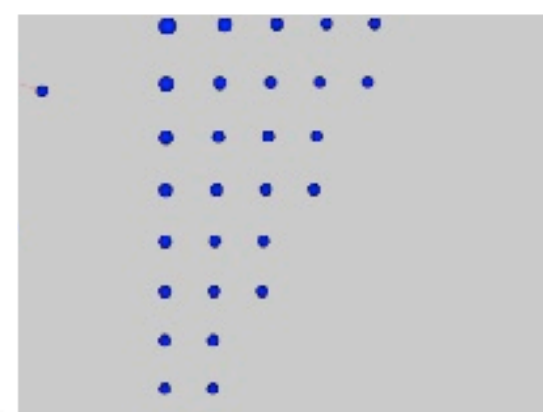
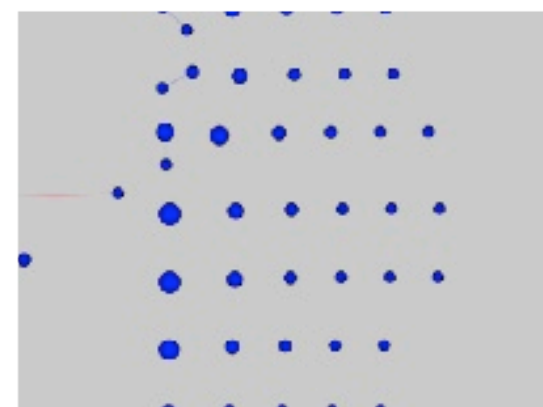
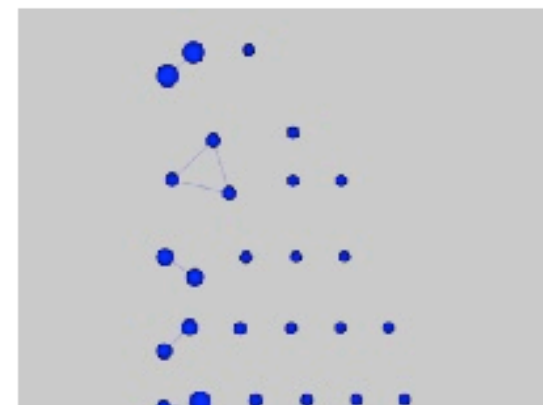
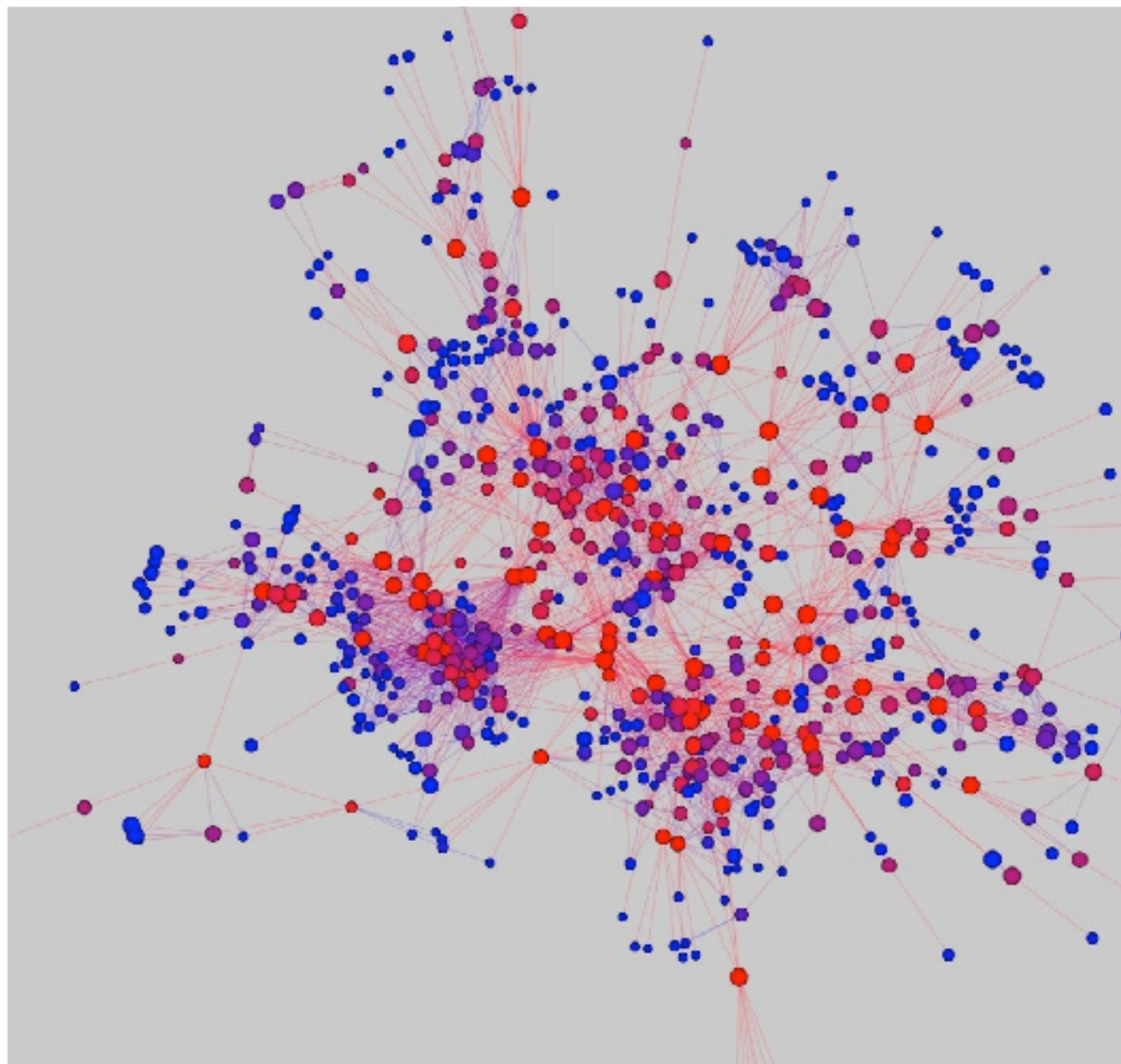
Featured Greasemonkey User Script: Clean Up

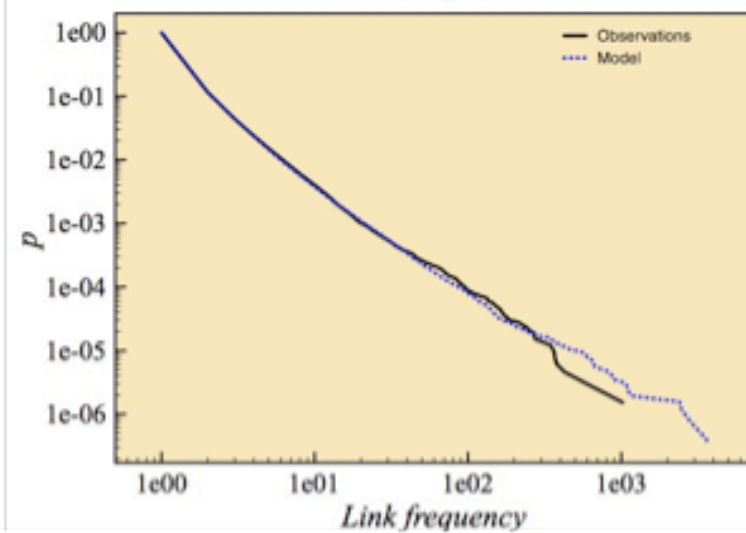
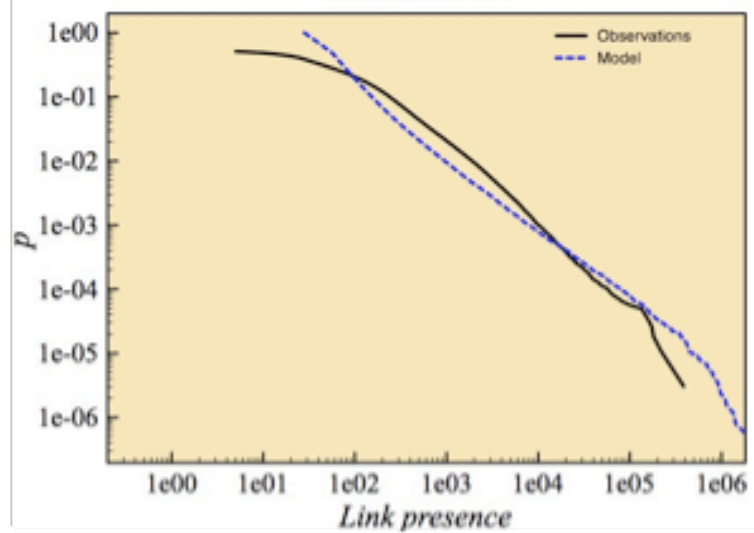
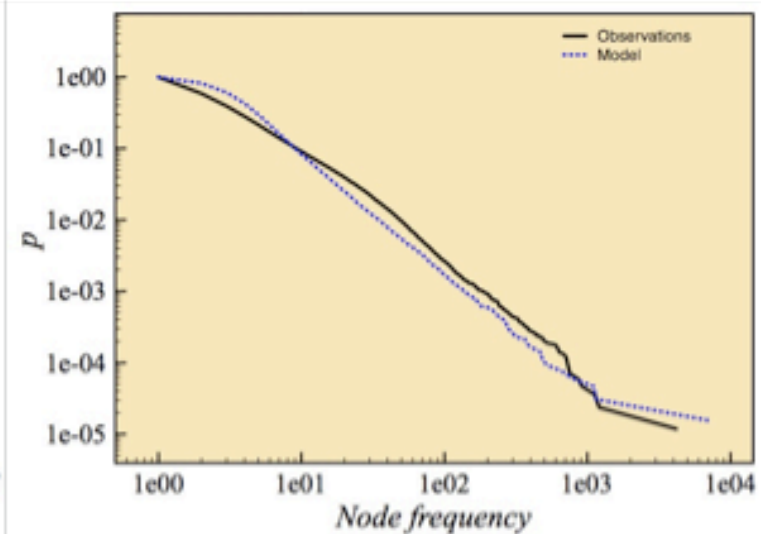
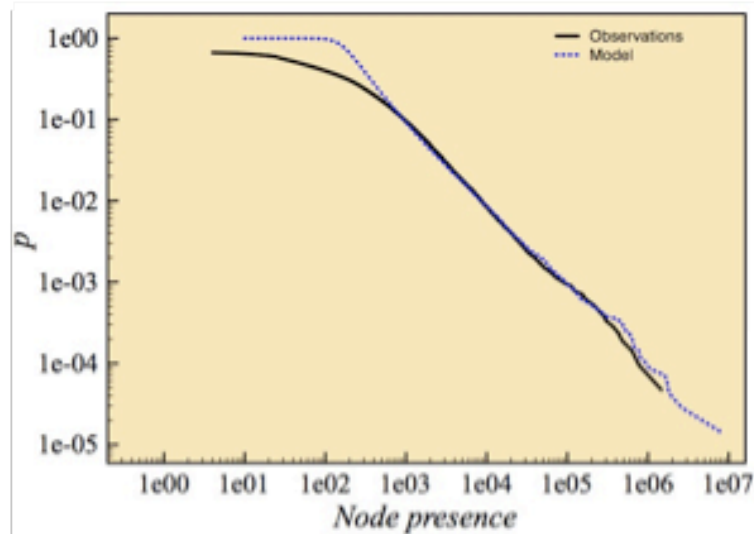
Mixed reactions

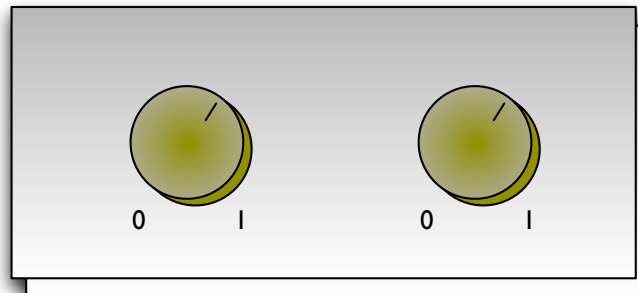
- People are not sure how to react
- It is definitely 2.0

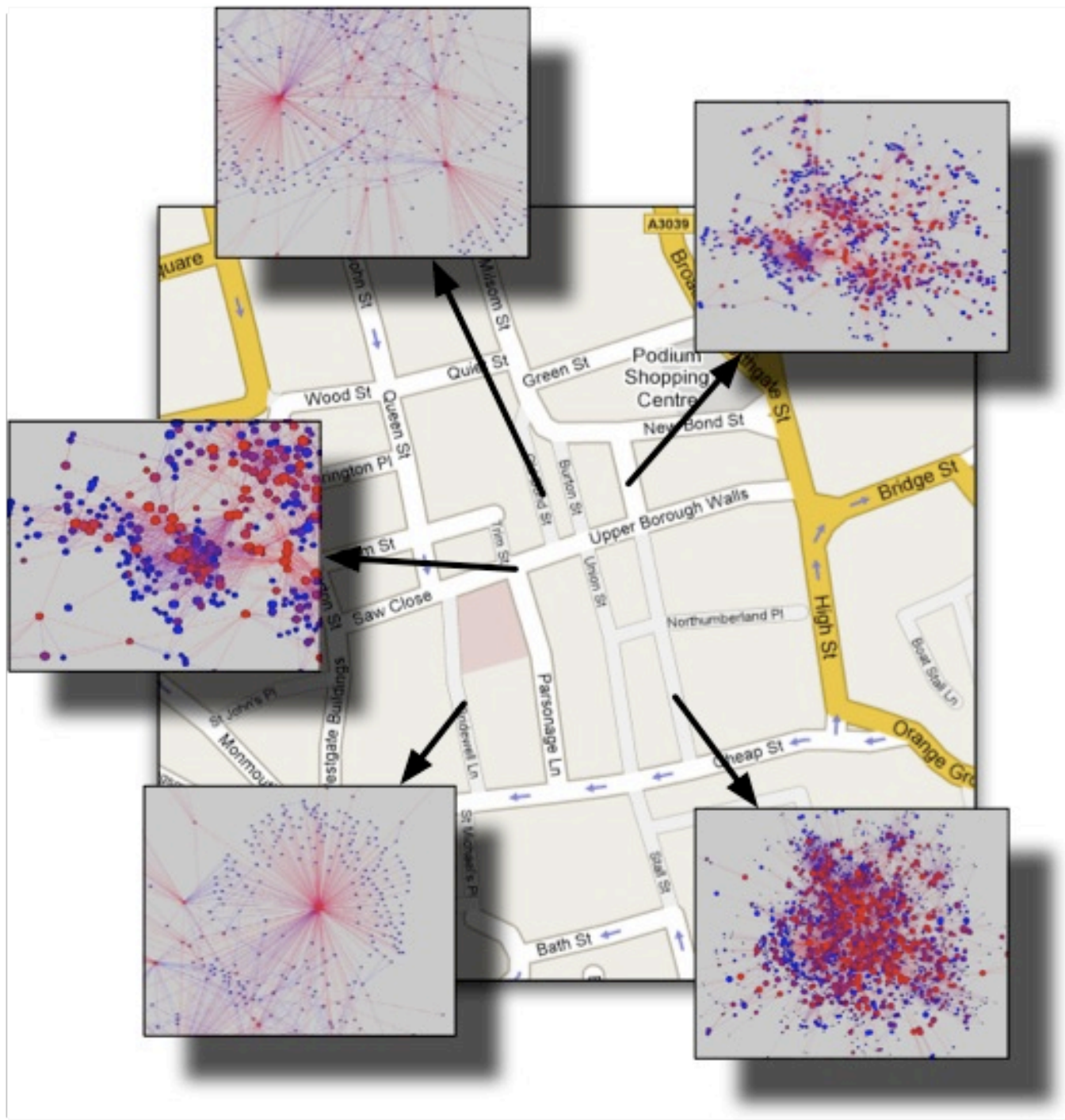


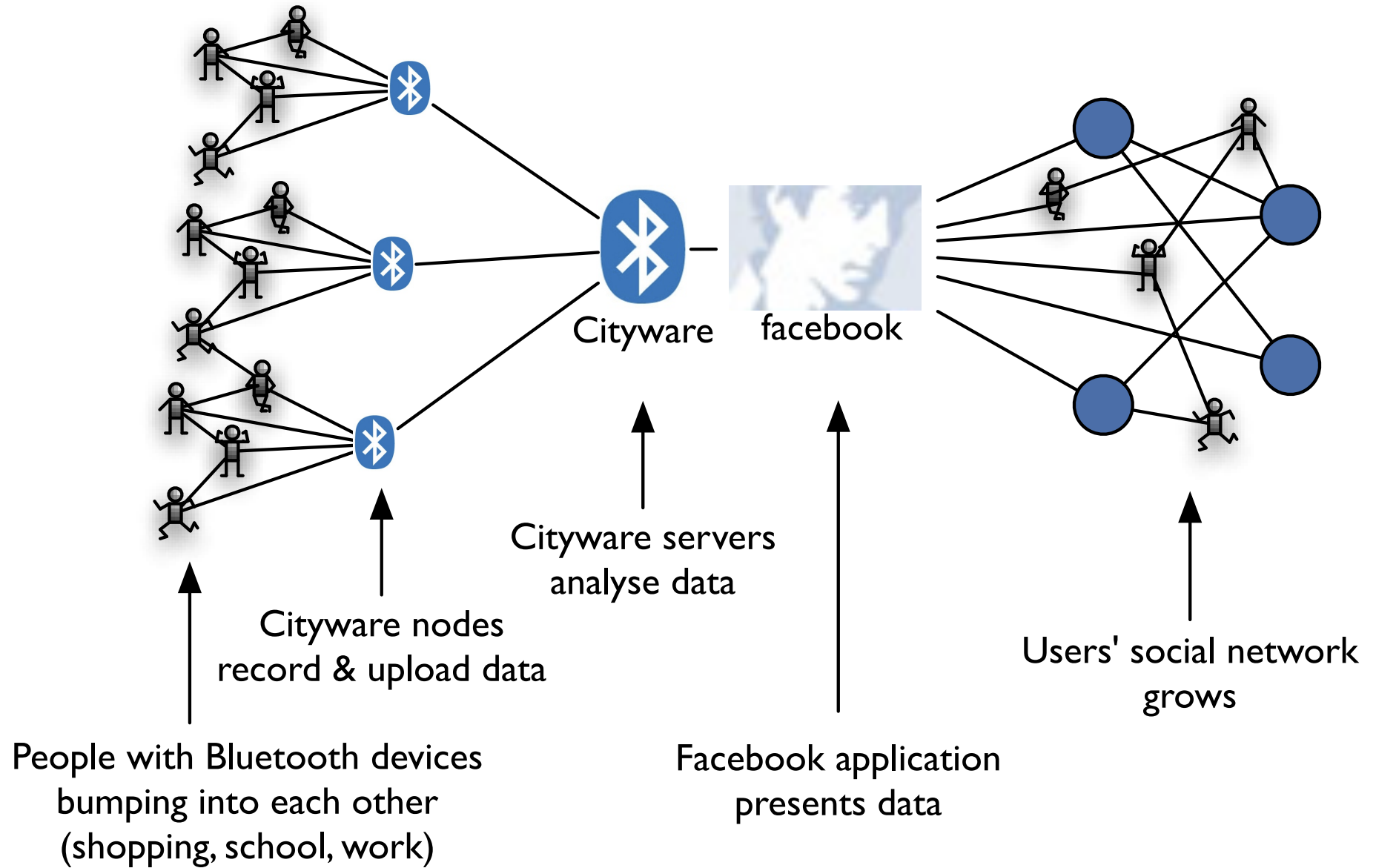














Standard Facebook
toolbar

Cityware toolbar

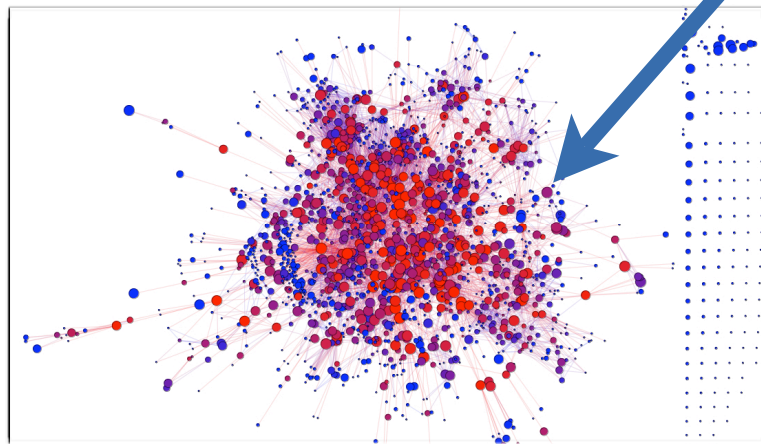
Bluetooth devices linked
to a user's profile

Encounters grouped by
recency, duration, frequency

Encounter with a device
linked to a profile

Encounter with an
unknown device





Facebook | Cityware

http://apps.facebook.com/cityware/index.php?active=duration&use Google

VK Home Photography Google docs ODEON - Bath Tube map Mac Wallpapers MacResearch NBG ACM

Google Facebook | Cityware

facebook Profile edit Friends Networks Inbox home account privacy logout

Cityware My Settings Getting Started About Cityware

Search Cityware

Applications Cityware Photos Group Events Developer

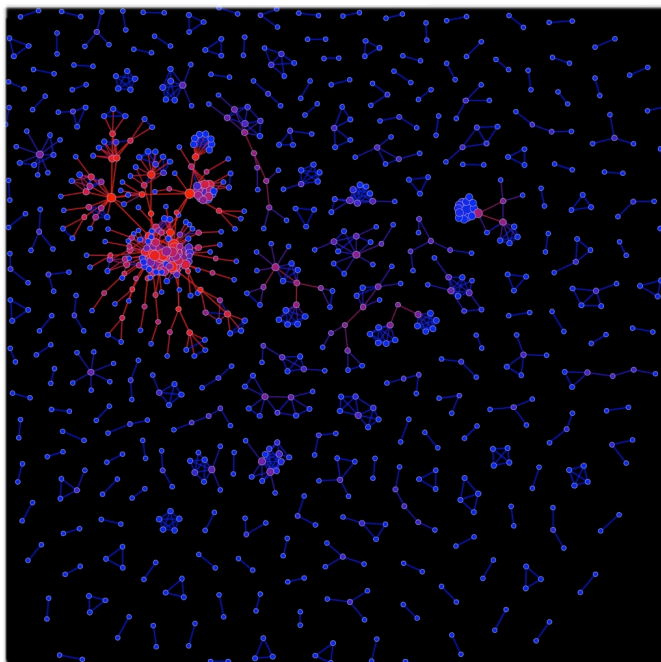
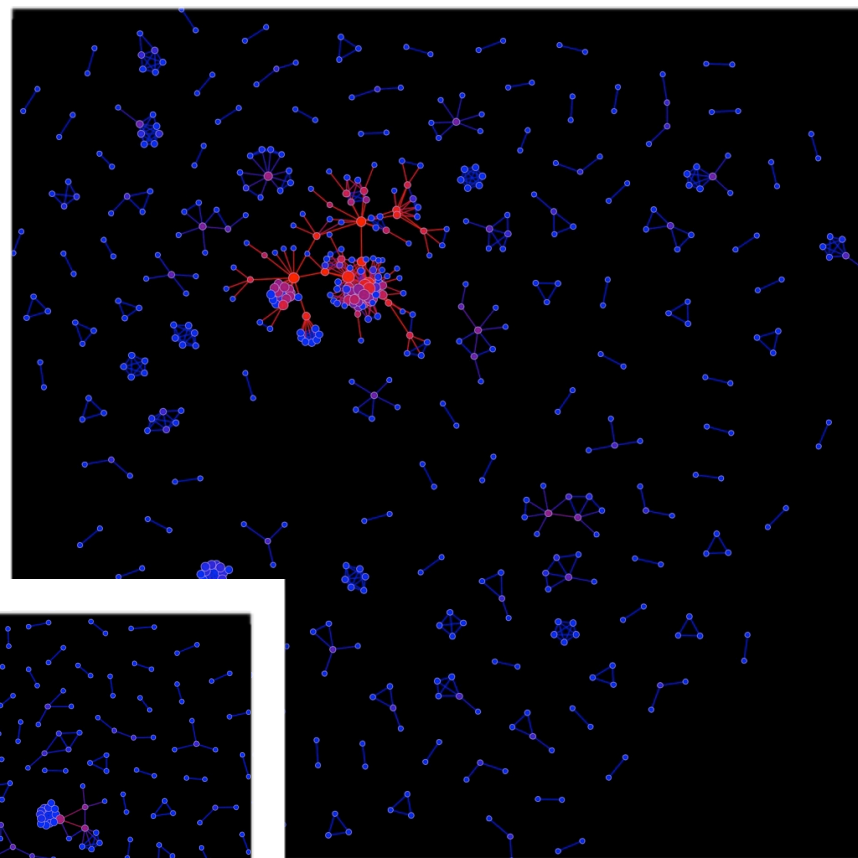
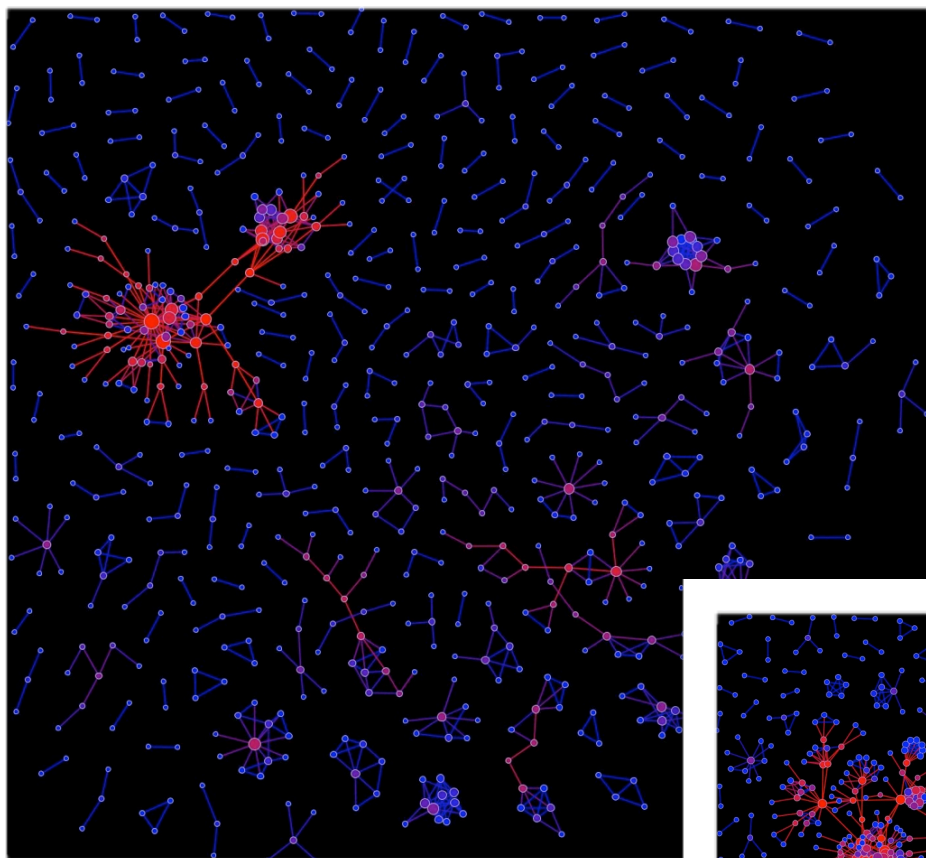
Vassilis Kostakos's Cityware Profile - Displaying device: vk


Last Seen With... Spends Most Time With... Meets Most Often...

Show more

	CSR - bc4 BT ID: XXXXXXXXX7A4 Time together: 2 hours Tag this device		Lulu BT ID: XXXXXXXXXB2A Time together: 1 hour Tag this device
	Tim Coughlan BT ID: XXXXXXXXX288 Device Name: TimsLaptop Time together: 54 minutes Tim is your friend Tim's Cityware Profile		Eamonn BT ID: XXXXXXXXXB37 Time together: 53 minutes Tag this device
	Vassilis Kostakos (You) BT ID: XXXXXXXXXFC1 Device Name: v Time together: 51 minutes This device belongs to you Vassilis's Cityware Profile		Marcus L. Da Silva BT ID: XXXXXXXXX2C9 Device Name: Vicky Time together: 45 minutes Marcus is your friend Marcus's Cityware Profile
	minime9 BT ID: XXXXXXXXXE73 Time together: 44 minutes Tag this device		minime10 BT ID: XXXXXXXXXD1E Time together: 44 minutes Tag this device

Page built by Cityware about developers jobs advertisers polls terms privacy help



The top of the slide features a banner image. On the left, the 'cityware' logo is displayed in a white, lowercase, sans-serif font. Below it, the tagline 'urban design & pervasive systems' is written in a smaller, white, lowercase font. The background of the banner is a warm, golden-yellow sunset or sunrise scene. In the foreground, the silhouettes of three people are visible, standing on a balcony or bridge and looking out over a city skyline. The sun is a bright, glowing orb in the center of the sky, casting a long, horizontal lens flare across the upper portion of the image. The city skyline in the distance includes various buildings and industrial structures, all silhouetted against the bright sky.

cityware

urban design & pervasive systems

Thank you

Vassilis Kostakos

vk @ cs . bath . ac . uk

[http :// www . cityware . org . uk](http://www.cityware.org.uk)