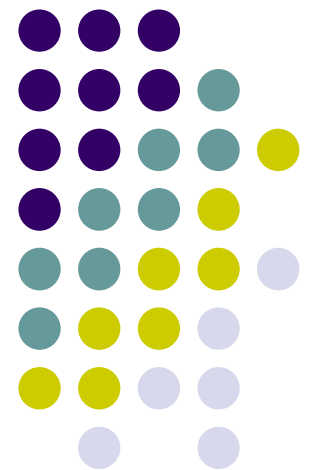


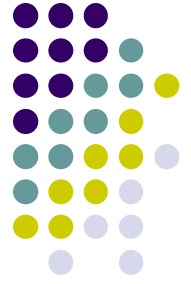
Advanced Computer Graphics

CS 525M: *Using Proximity and Homophily to Connect Conference Attendees in a Mobile Social Network*

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*Computer Science Dept.
Worcester Polytechnic Institute (WPI)*





Overview

- Introduction
- Related Work
- System Design
- User Behavior Analysis
- Discussion
- Conclusion



Introduction

- Conference registration fee is expensive
 - UbiComp 2012: \$700 (ACM/SIG Members), \$800
- Main objectives
 - Establish connections with people
 - Present paper
 - ~~Eat & drink~~
- Problem
 - “My pocket is full of business cards...”
 - “Sorry... What’s your name again?”
 - “Ugh... Sorry, I don’t know what you’re talking about.”

Introduction – “conference”



Introduction – “conference”



Introduction – “conference”

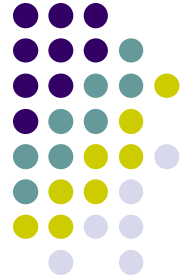




Related Work

- Homophily Principle
 - **Social Similarity**, “People form social ties based on certain same characteristics they possess.”
 - e.g. 49ers fans don’t select Raiders fans as friends this year.
- Physical Proximity
 - GPS, Bluetooth, RFID, or Near Field Communication (two-way)
- Location-based Services and Analysis
 - HomeExplorer, Foursquare, Gowalla, etc.
 - Utilize RFID badges to detect **face-to-face proximity** in scientific conference, museum exhibition, office environment, and academic congress

Related Work

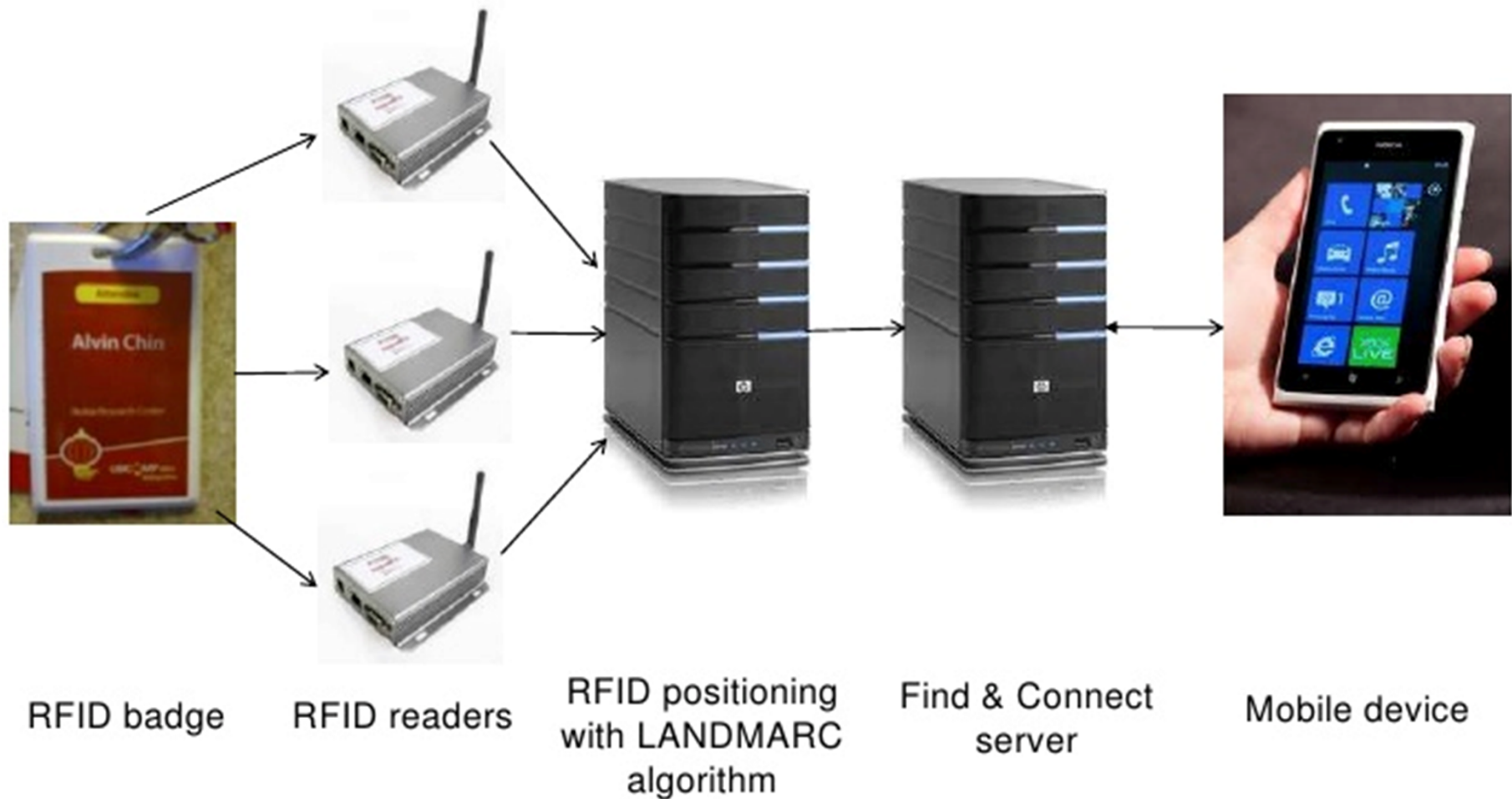


CANU?

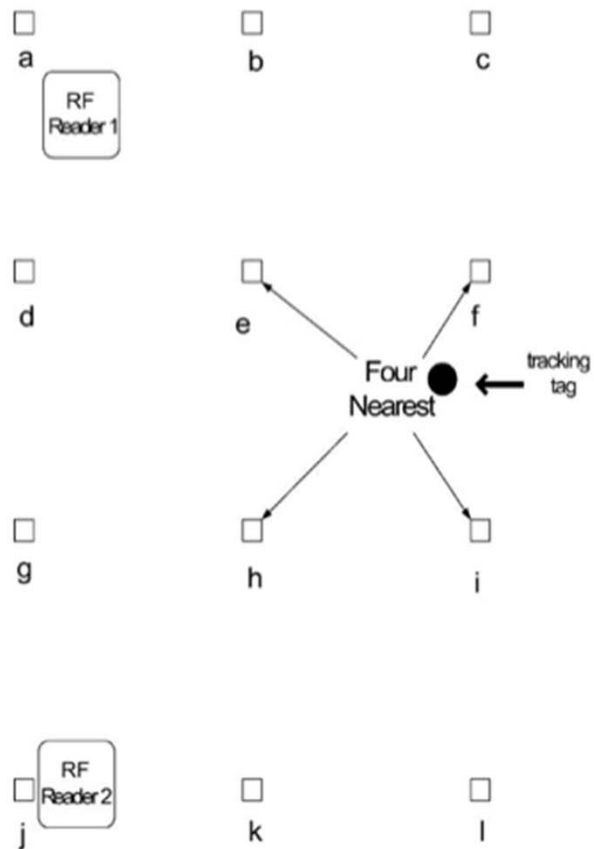
*“These applications or systems **for** help users **create** and **maintain** their social network at the same time to having **convenience** and **facilities** to users.”*

-- Page 3, Paragraph 1, Sentence 1

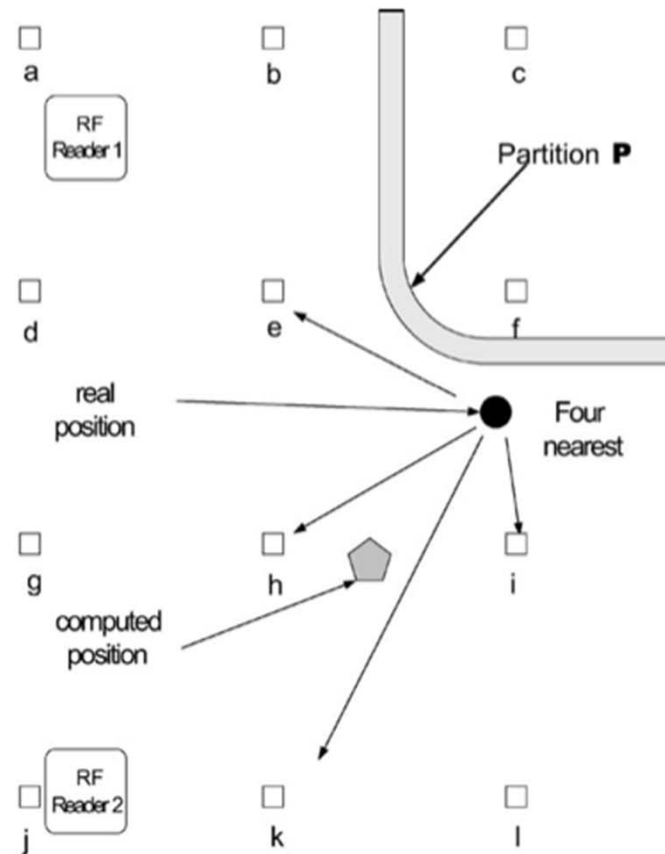
System Design



Position System

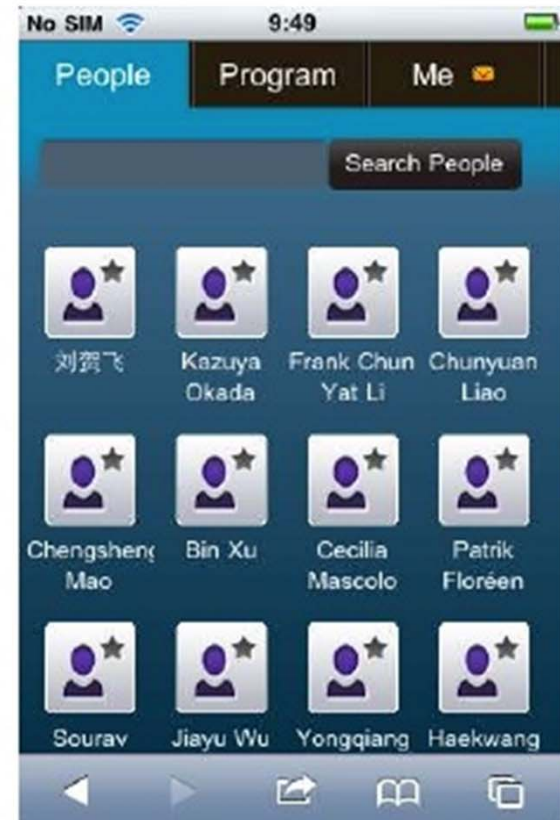
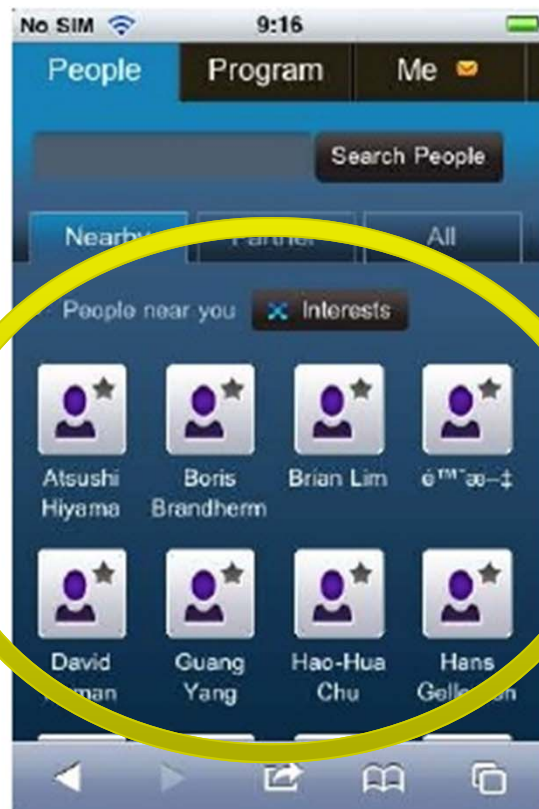


(a) without a physical partition

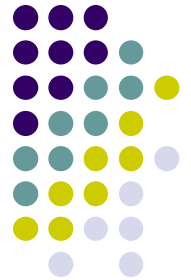


(b) with a physical partition

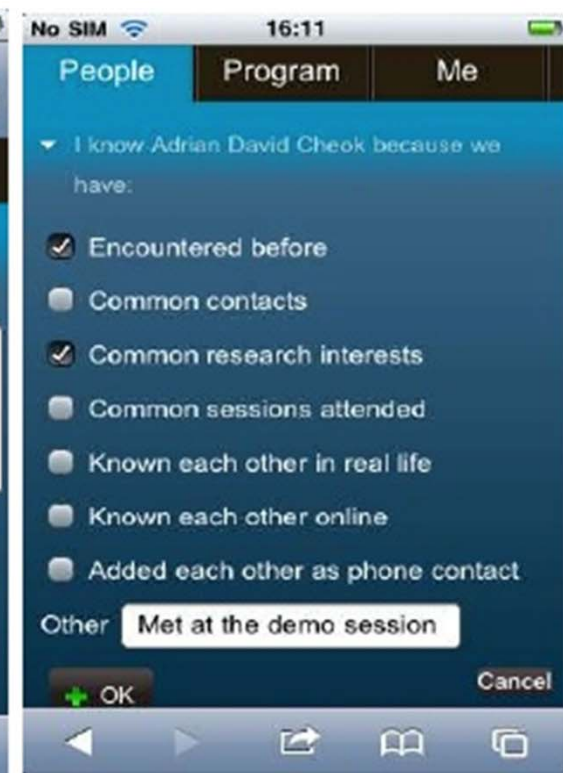
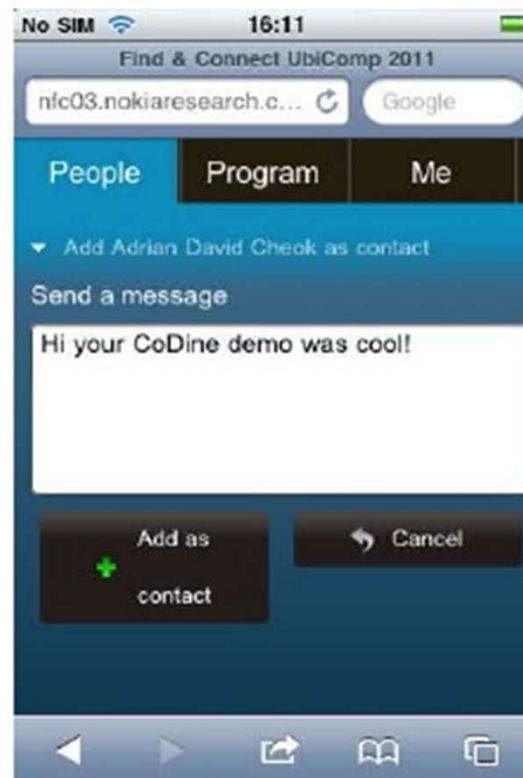
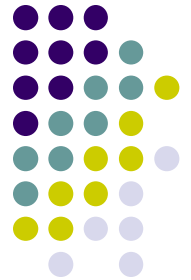
Web App – Nearby



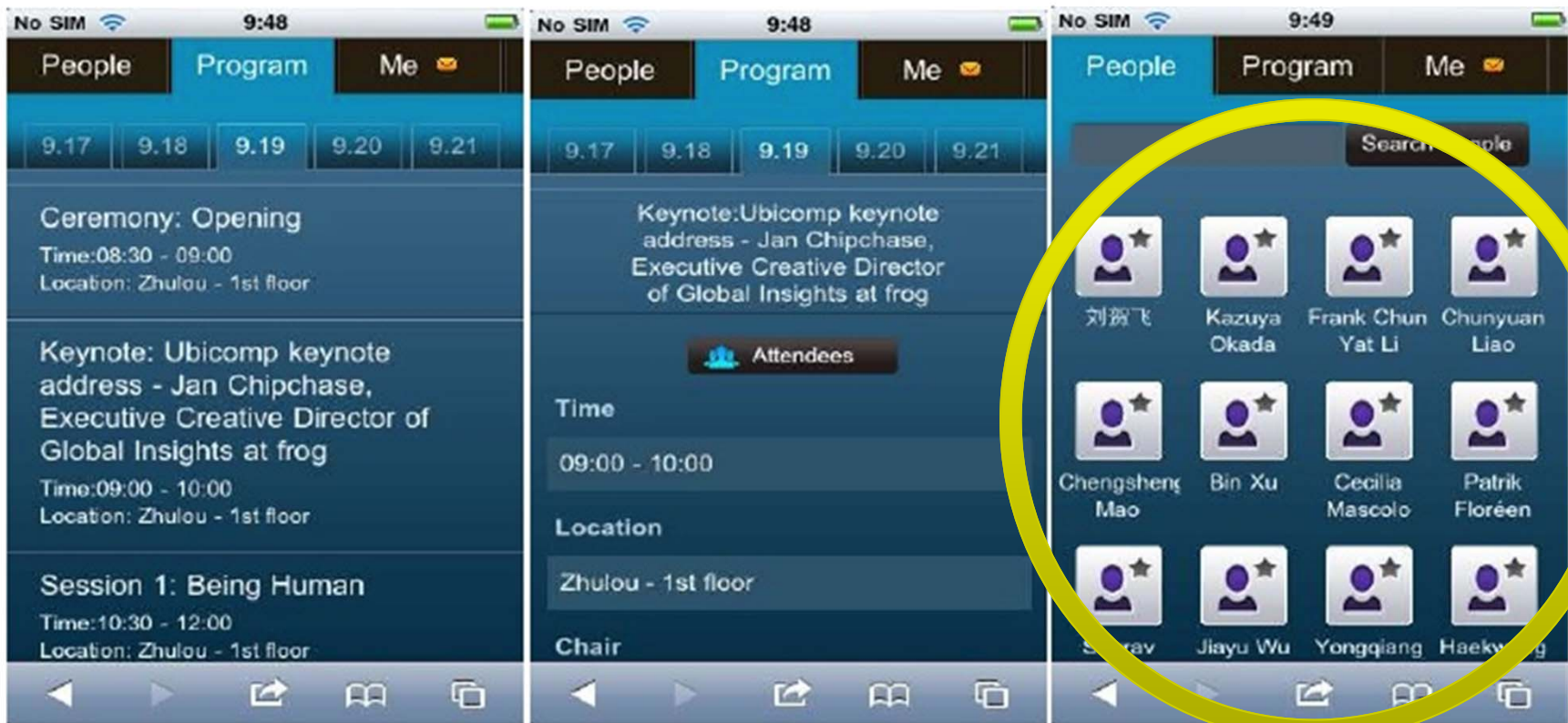
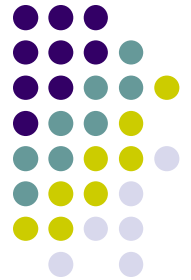
Web App – In Common



Web App – Add Contact



Web App – Who Attended Sessions



Web App – Notification and Recommendation



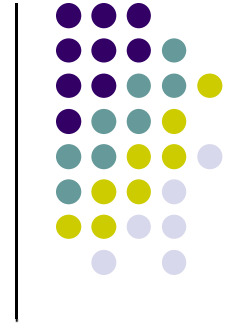


User Behavior Analysis

- **241** (57%) of 421 registered attendees used the system
- Browsers
 - Safari: **31.34%**
 - Chrome: **23.85%**
 - Android browser: **22.12%**
 - Firefox: **9.08%**
 - IE: **8.29%**
- **11 minutes and 44 seconds** per visit (?)
- **16.5** pages browsed per visit

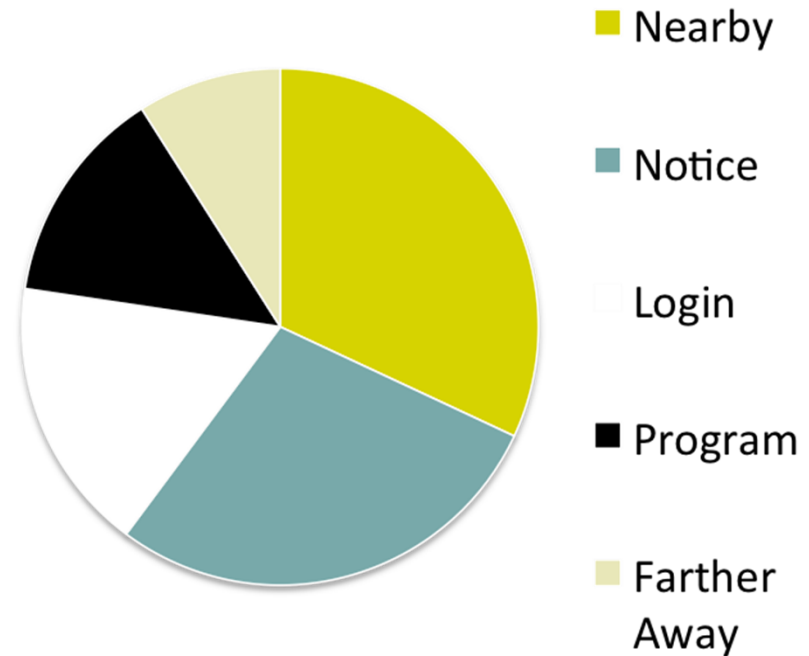
	All registered users	Authors who are registered users
# of users	112 (??)	62
# of users having contact	59	55
# of contact links	221	192
Average # of contacts	7.49	6.98
Network density	0.1292	0.1293
Network diameter	4	4
Average clustering coefficient	0.462	0.466
Average shortest path length	2.12	2.05

User Behavior Analysis

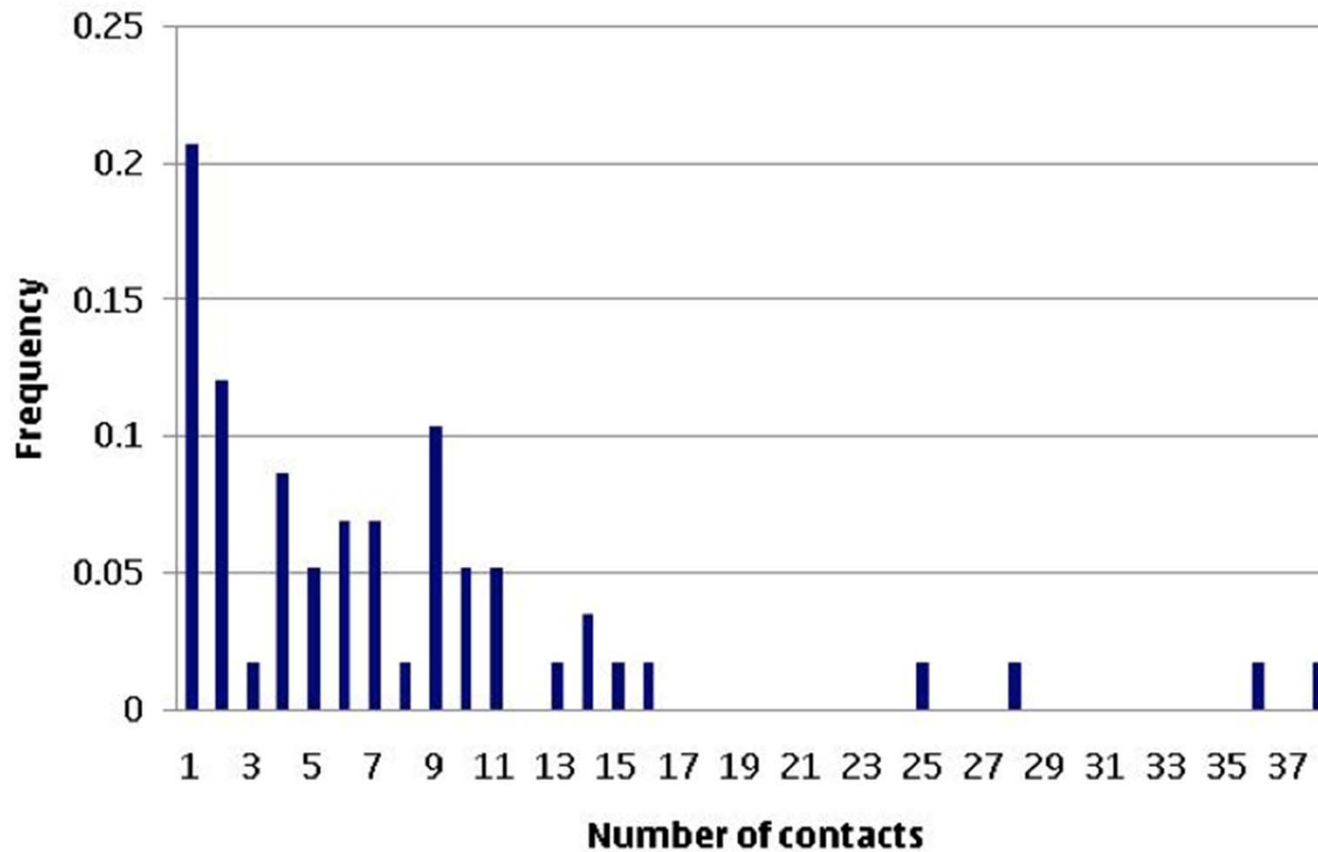


- *finding people nearby* (11.66%)
- *notices* (10.30%)
- *login* (6.27%)
- *program* (4.97%)
- *finding people farther away* (3.29%)

Features



User Behavior Analysis





User Behavior Analysis

Reason for adding friends/contacts	Survey (29)	Find & Connect	Rank (survey)	Rank (Find & Connect)
Encountered before	59%	37%	2	2
Common contacts	48%	12%	3	5
Common research interests	24%	35%	5	3
Common sessions attended	7%	24%	7	4
Know each other in real life	69%	39%	1	1
Know each other online	34%	9%	4	6
Added each other as phone contact	21%	4%	6	7



User Behavior Analysis

- Interesting results:
 - **Common sessions** that a user and another person have attended before do not affect that user from adding that person as a friend
 - **Knowing a person online** does not much affect adding that person as a friend/contact
 - People that are **in a user's phonebook** are not the primary reasons for adding them as friends/contacts
 - **Contact recommendation** was rarely used for making contact requests



User Behavior Analysis

Find & Connect

	All registered users
# of users	112
# of users having contact	59
# of contact links	221
Average # of contacts	7.49
Network density	0.1292
Network diameter	4
Average clustering coefficient	0.462
Average shortest path length	2.12

Encounter (used RFID, but not F&C)

	Registered users
# of users	234
# of encounter links	15960
Average # of encounters	68.2
Network density	0.5861
Network diameter	3
Average clustering coefficient	0.876
Average shortest path length	1.414



Discussion

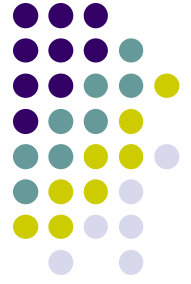
- *“The results show that our Find & Connect application could **better** help people build connections in a conference.”*
 - Better? Compared to what? UIC conference?
- *“This event-based social network is unique in that we cannot use **traditional** methods to analyze it as in online social networks.”*
 - Then, what’s your “untraditional” method?
- Recommendation feature was not popular as expected.



Conclusion

- **Find & Connect**
- *Authors* primarily make use of Find & Connect to add contacts
- The contact and encounter network follows the *social influence theory* of around 3 degrees of separation
- The encounter network is *more dense* than the contact network
- *Proximity and homophily* strongly influenced the reasons for why users added others as contacts
- The acceptance rate for adding contacts based on contact *recommendations* was fairly low

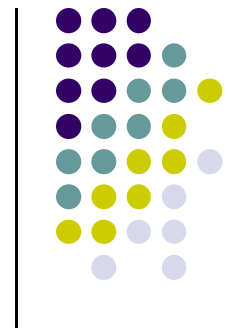
Wait a minute...



CANU?

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Q & A

THANKS