Social Sensing

-

Utilizing Individual Communication Patterns for Cognitive Interventions

Professor Kåre Synnes, PhD
Luleå University of Technology

2013-09-20

Professor Kåre Synnes, PhD

Ericsson (1994-1998)

MSc in Software Engineering (1995)

Marratech (1998-2007)

PhD in Computer Science (2002)

Assistant Professor in
Computer Science and Media Technology (2002)

Associate Professor in
Pervasive and Mobile Computing (2012)

Professor in Media Technology (BTH 2013)

Evaluator FP7 / MC

EIT ICT Labs

Captain in the Swedish Army

Wife+twins, Golf, Diving, Trekking, Books, Film

LULEÅ UNIVERSITY OF TECHNOLOGY

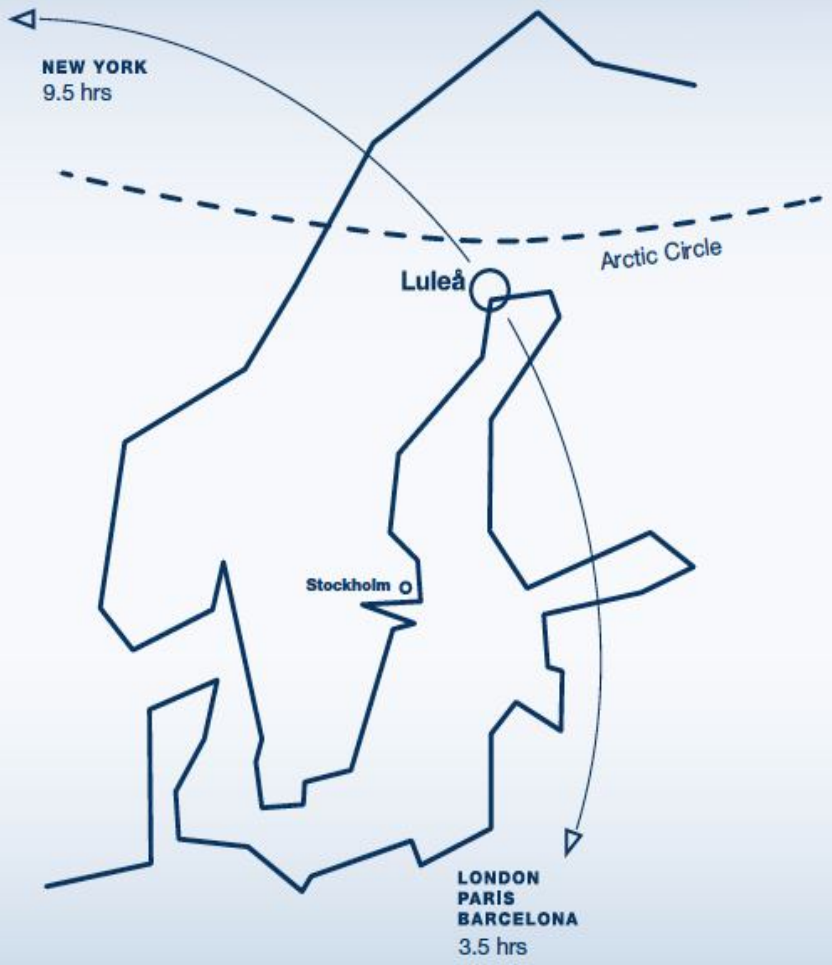
MARRATECH

Google


A
B
A - Luleå
B - Chania
4600 km apart
55 hours by gCar

The northernmost University of Technology in Scandinavia
World-class research and education

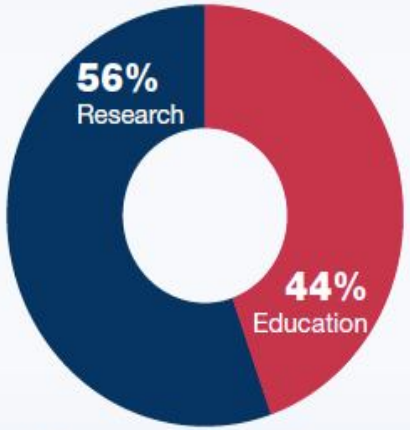
LULEÅ UNIVERSITY OF TECHNOLOGY



Luleå University of Technology has an annual turnover of SEK 1,5 billion. The University has 1,600 employees and 19,000 students. Research is conducted in close cooperation with companies such as Bosch, Ericsson, Scania, LKAB, SKF and leading international universities.

Turnover SEK 1,5 billion
69 research subjects has a turnover of SEK 830 million of which 60% are externally funded.

Students	**19 000**
Personnel	**1 600**
Professors	**183**
Technical admin staff	**580**
Teachers and researchers	**540**
PhD students	**590**



Total turnover SEK 1,5 billion

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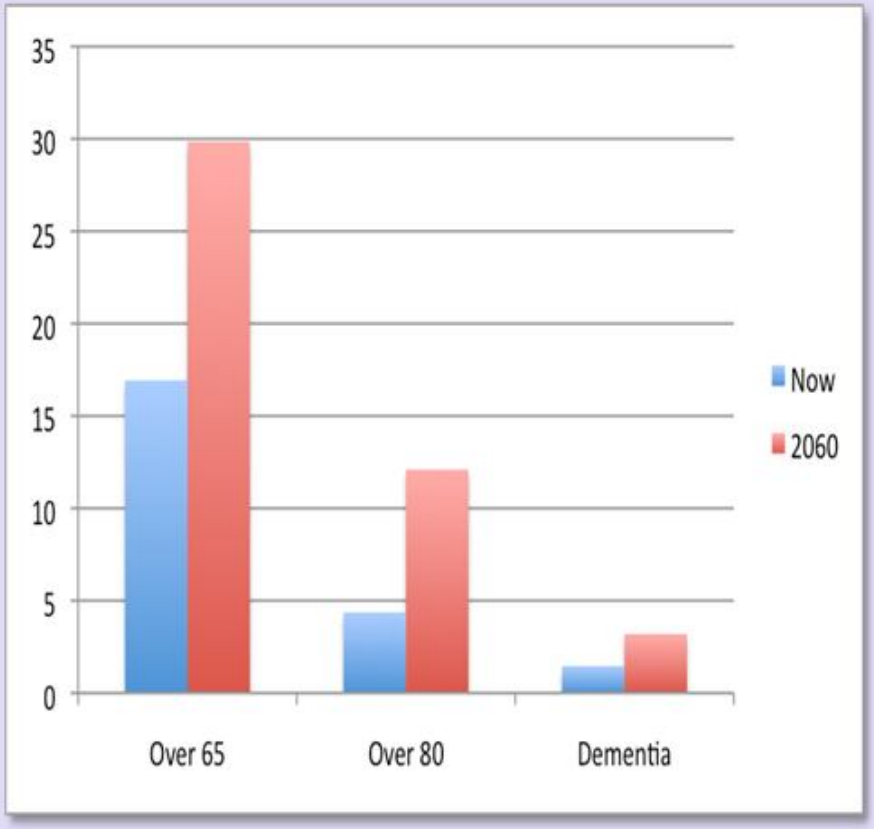
European Market



Dementia is a progressive, chronic disease - 10% of persons above 65.

5.5 million cases of Alzheimer's disease in Europe.

Life expectancy rising 2.5 years per decade. One-third over 60 by 2050.

Incidence of new dementia cases to almost triple until 2060.

Dementia care costs on average 10 000 EUR per year.

Can early stages of dementia be detected and then continously analysed by extracting individual communication patterns?

Cogknow DayNavigator

(software service system)

(touchscreen)

(mobile)

2008-2011

MemoryLane

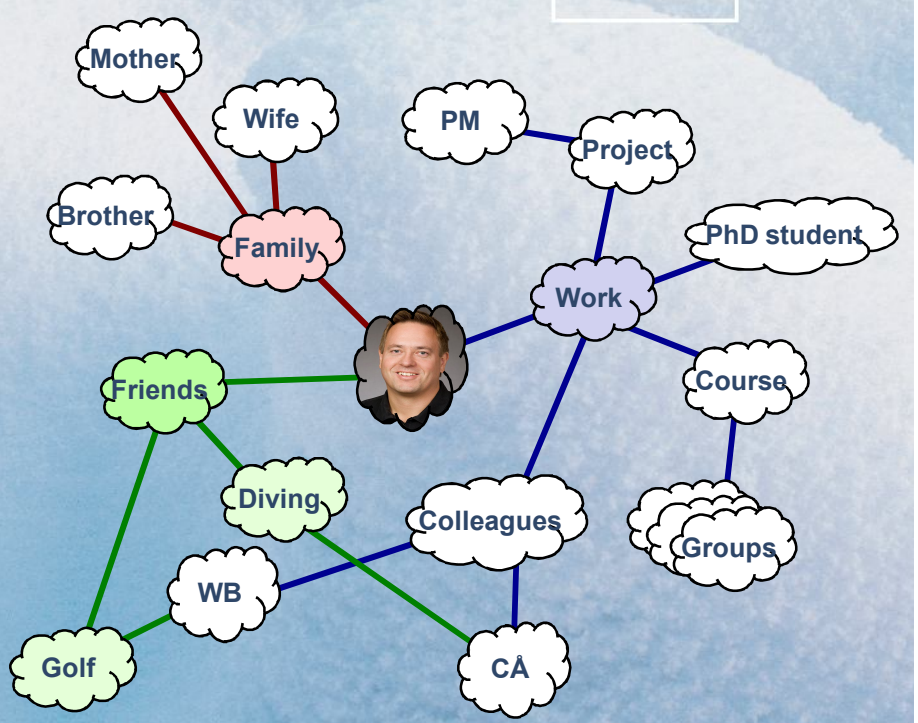

Kalender
Lägg till händelse
Livsberättelse
Platser
Personer
Händelser 2010-10-01
Händelser 2010-10-02
ASUS
Activity
Meet Stefan
Today at
17:00
A Building

Can early stages of dementia be detected and then continously analysed by extracting individual communication patterns?

An individual
3 minutes micro-assignment:

Draw a mindmap!

Whom do you communicate with?

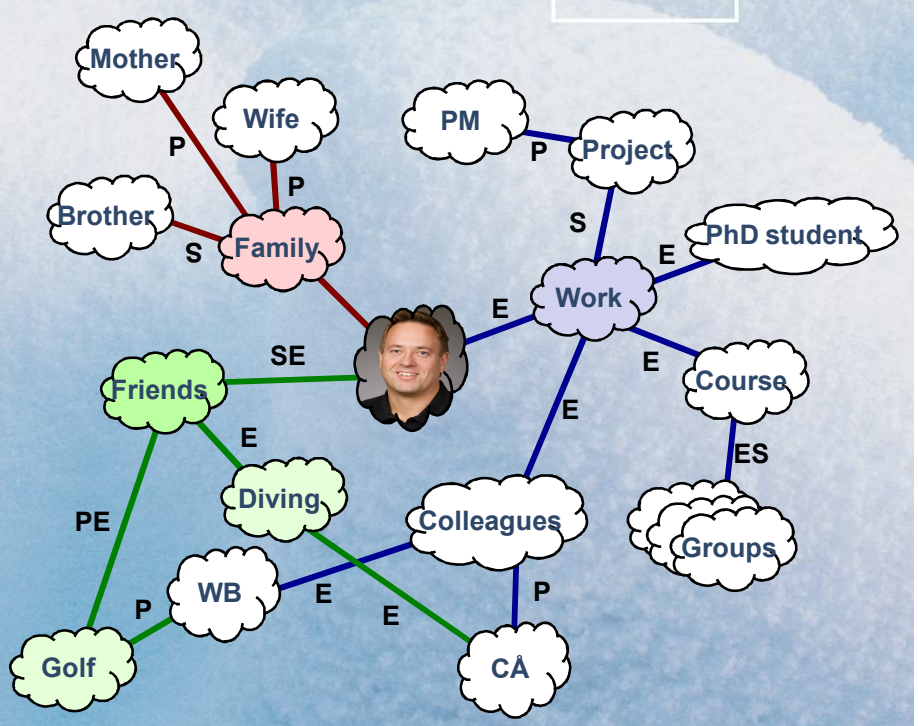


An individual
2 minutes micro-assignment:

Add detail to the mindmap!

How do you communicate?

P – Phone
E – Email
S – Social Network

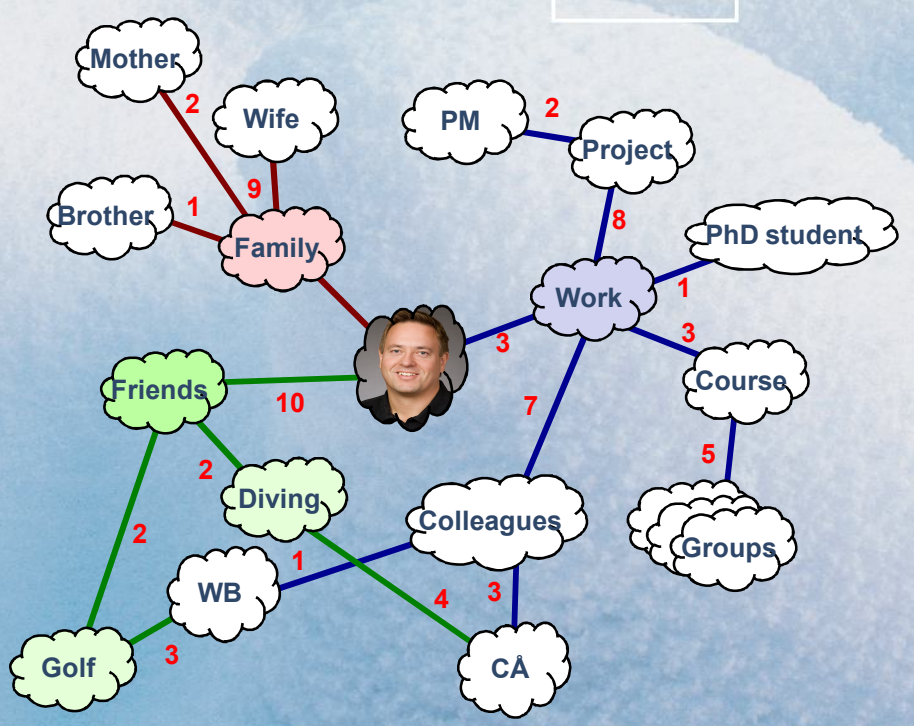


An individual
2 minutes micro-assignment:

Add detail to the mindmap!

How often do you communicate?

Times per week.

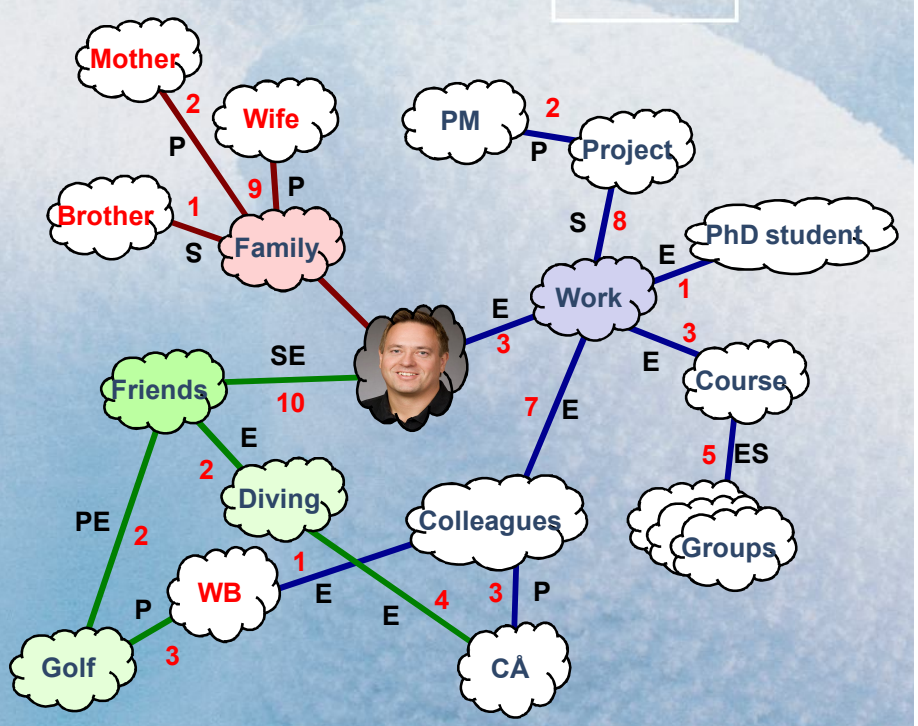


An individual
1 minutes micro-assignment:

Add more detail to the mindmap!

Who are the most important persons?

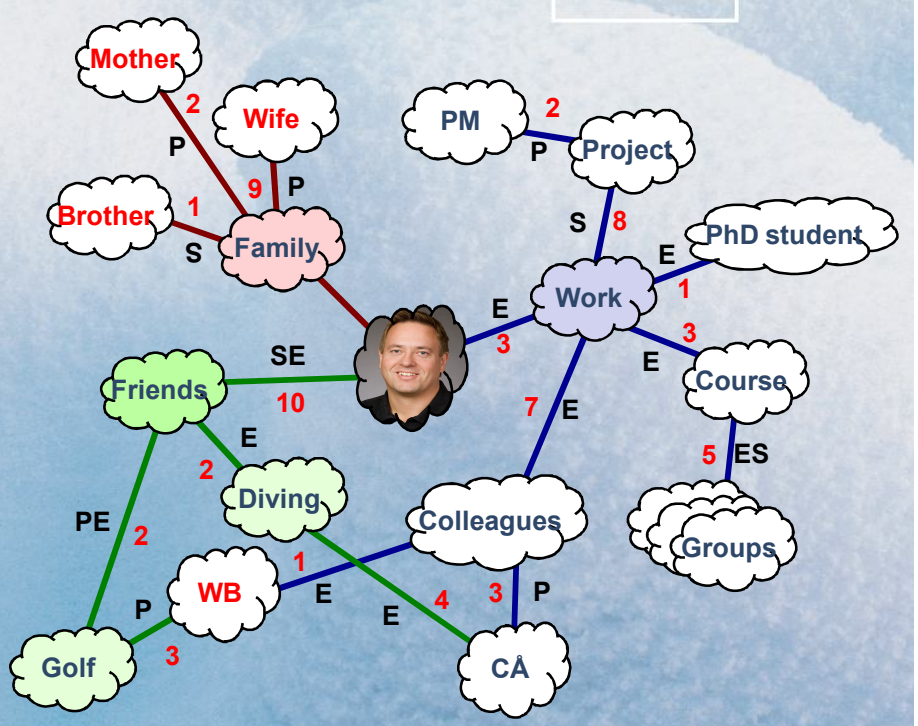
Circle the name or make it bold!



Would this change depending on context?

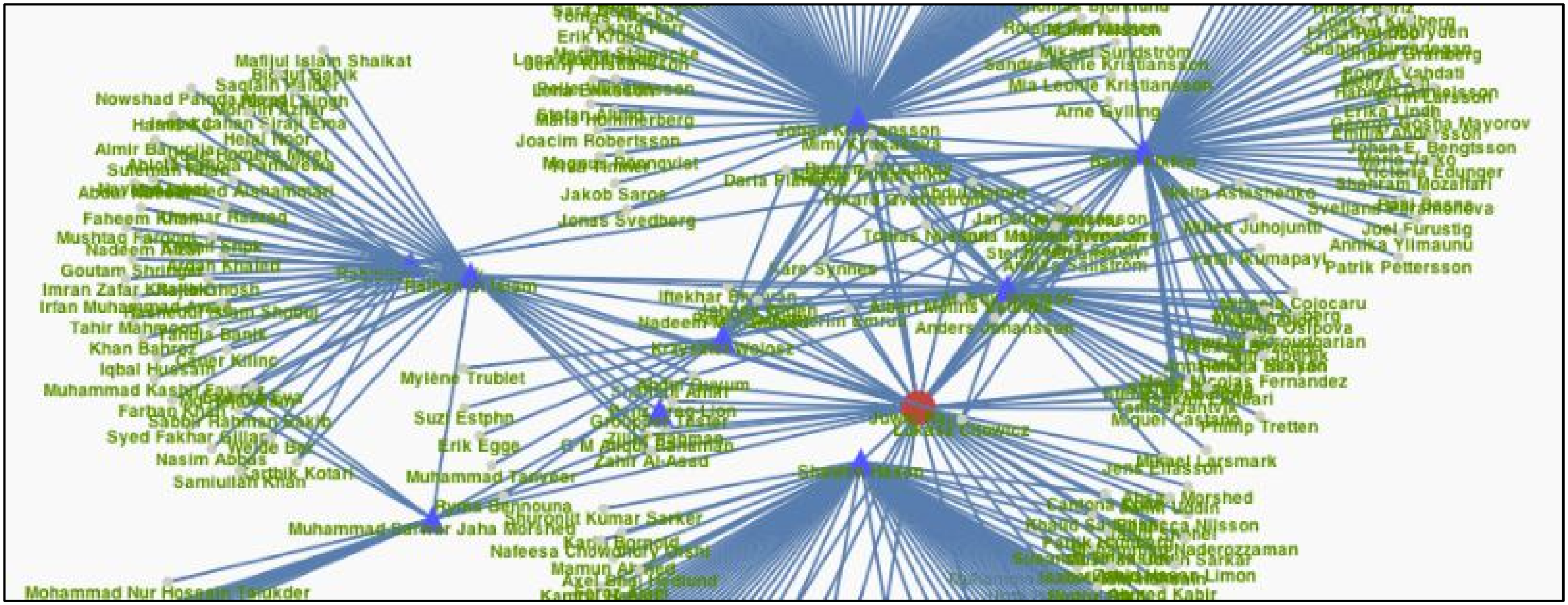
Would it change over time?

Do your mindmap look like your neighbours?



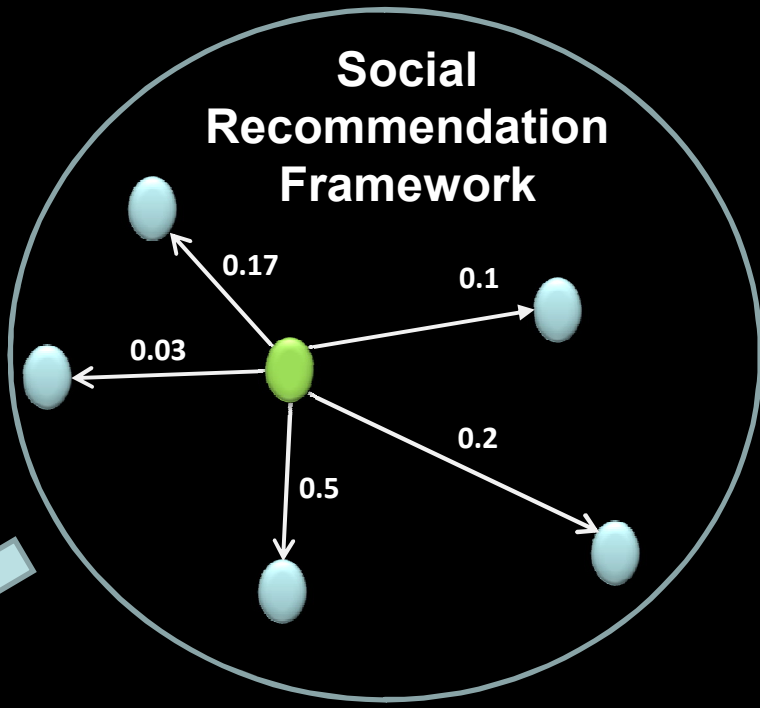
Can early stages of dementia be detected and then continously analysed by extracting individual communication patterns?


twitter
myspace.com
a place for friends
Google
Nov
10
del.icio.us
Google
Gmail
Google
YouTube
LinkedIn
last.fm the social music revolution
Technorati
Picasa
WIKIPEDIA
The Free Encyclopedia
jaiku
Blogster
flickr
from YAHOO!
Weblogs, Inc.
THE WELL



Mafijul Islam Shaikat
Nowshad Painda
Helal Noor
Almir Badnjevic
Imran Zafar
Tahir Mahmood
Khan Bahrez
Iqbal Hussain
Caner Kilinc
Farhan Khan
Nasim Abbas
Samiullah Khan
Mylène Trublet
Erik Egge
Muhammad Tanveer
Muhammad Sarwar Jaha Morshed
Mohammad Nur Hossain Talukder
Shuvrojit Kumar Sarker
Joacim Robertsson
Jakob Saros
Jonas Svedberg
Arne Gylling
Mikael Sundström
Sandra Marie Kristiansson
Mia Leonie Kristiansson
Pooya Vahdati
Erika Lindh
Johan E. Bengtsson
Shahram Mozaffari
Joel Furustig
Patrik Pettersson
Anders Johansson
Mihaela Cojocaru
Nicolas Fernandez
Philip Tretten
Mikael Larsmark
Jens Eliasson

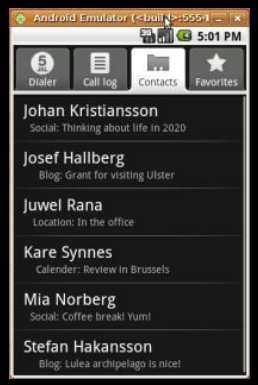

Add circle
7

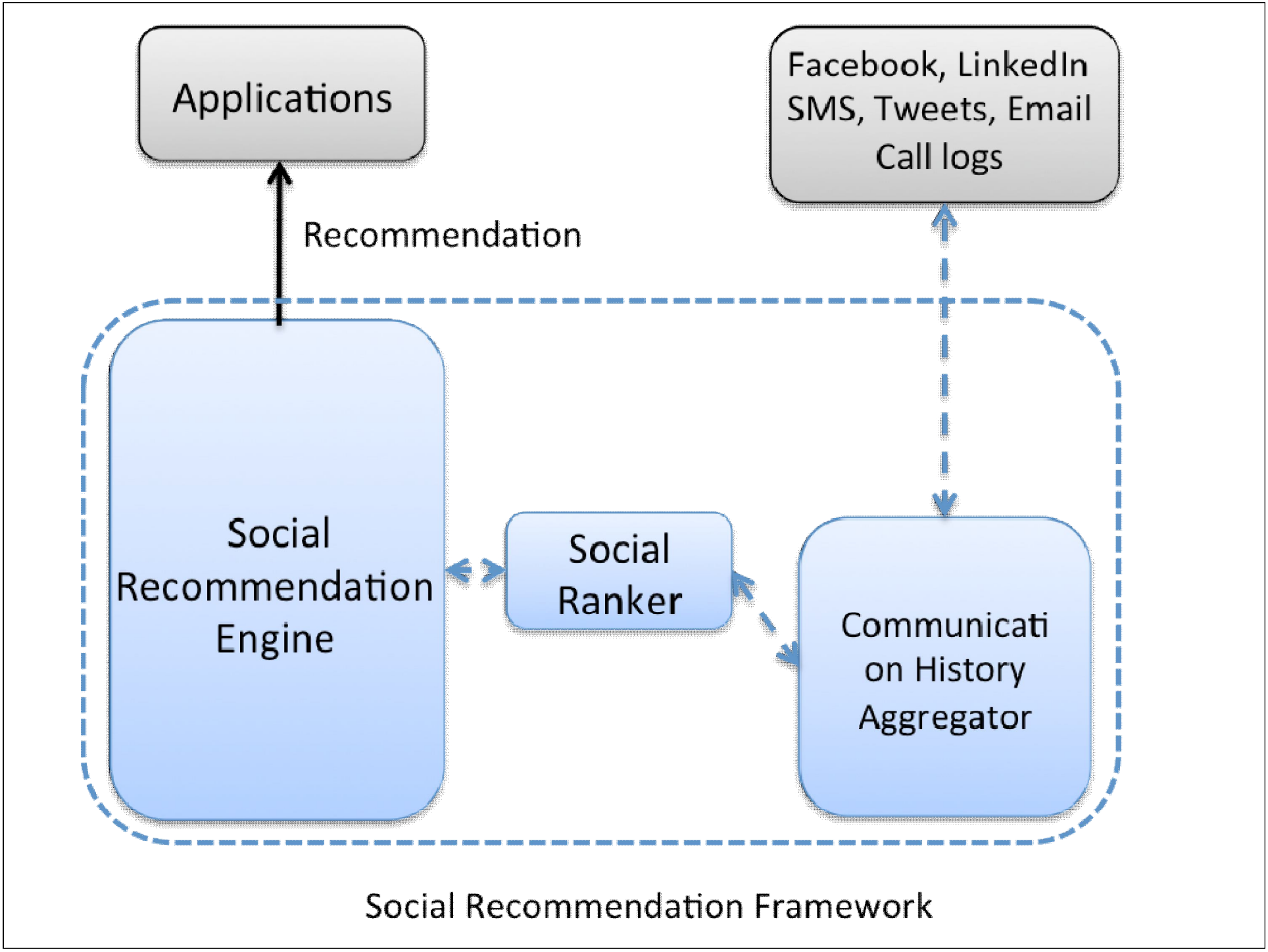


Presence

Prioriting & Filtrering

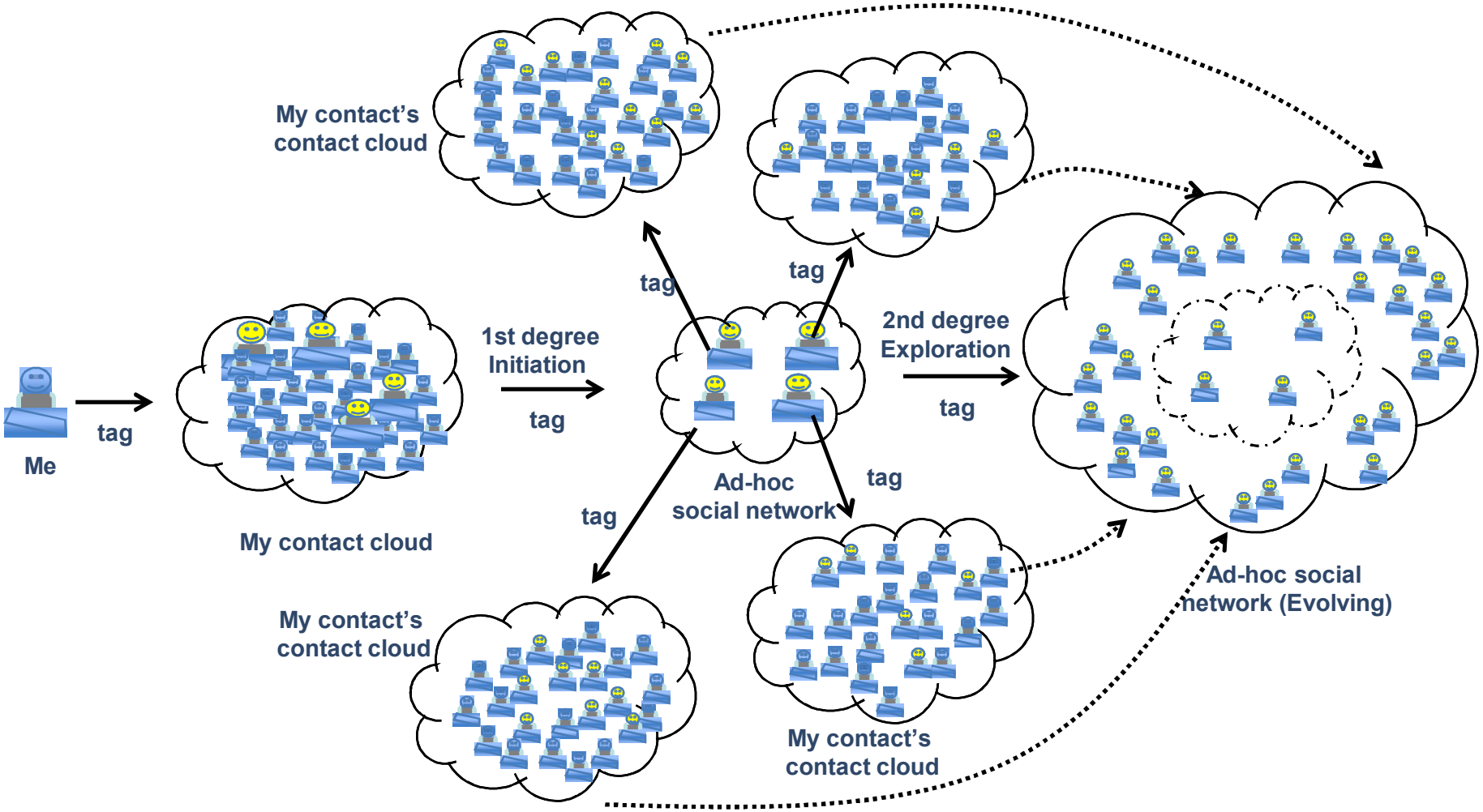
Service Initiation





Social Recommendation Framework

Ad-hoc social networks




LULEÅ
shimmer
DISCOVERY IN MOTION
www.Shimmer-Research.com

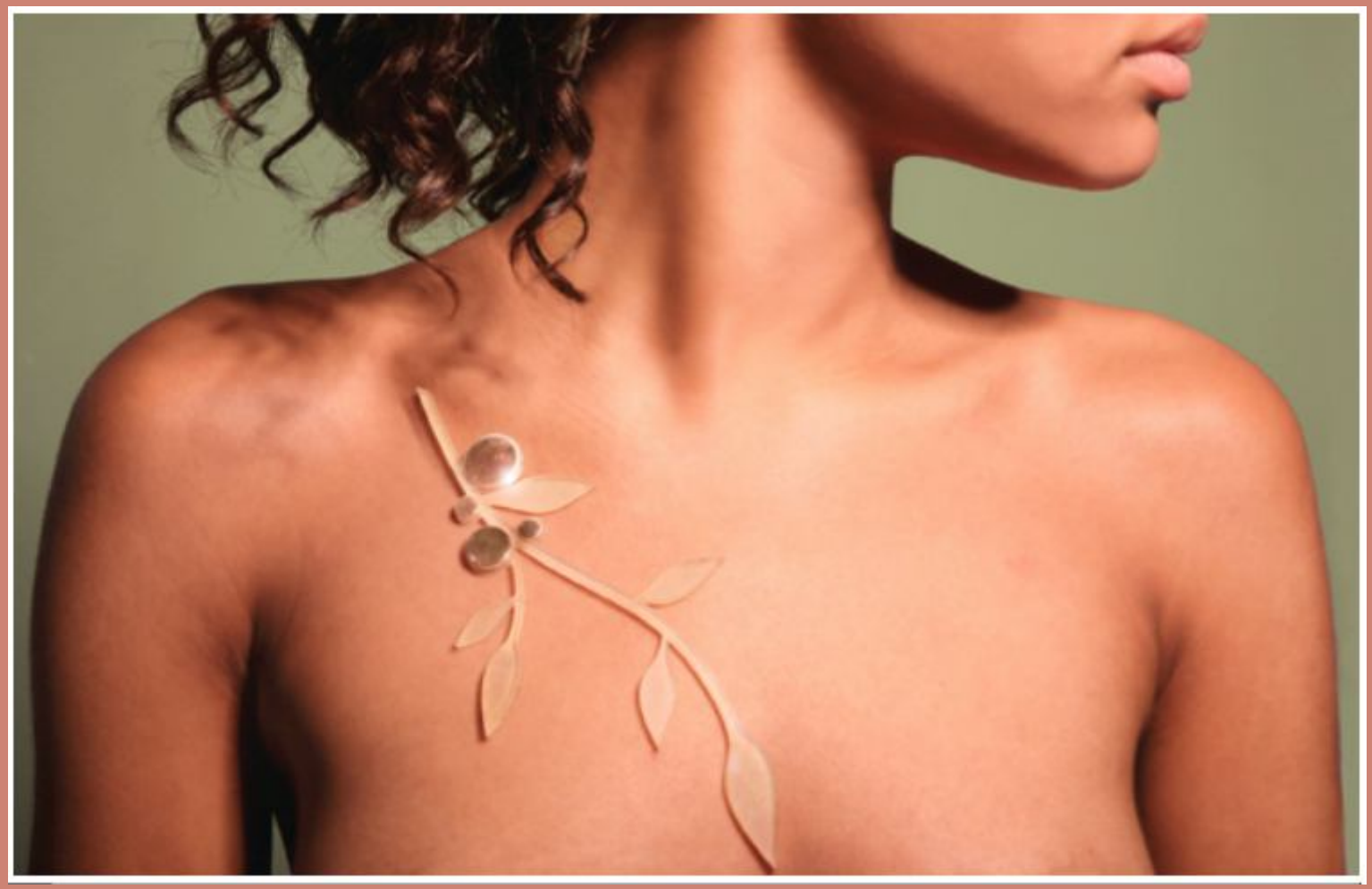
We can extract
detailed communication patterns
both from
physical face-to-face meetings
and
***online electronic communication*!**

Ray Kurzweil

“The law of accelerating returns.”

(Technological) Singularity

Post-humanism

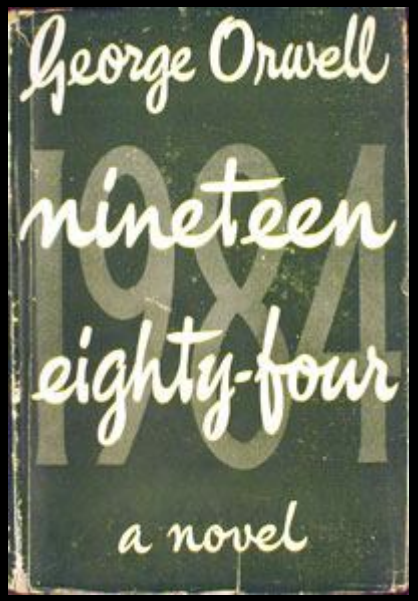


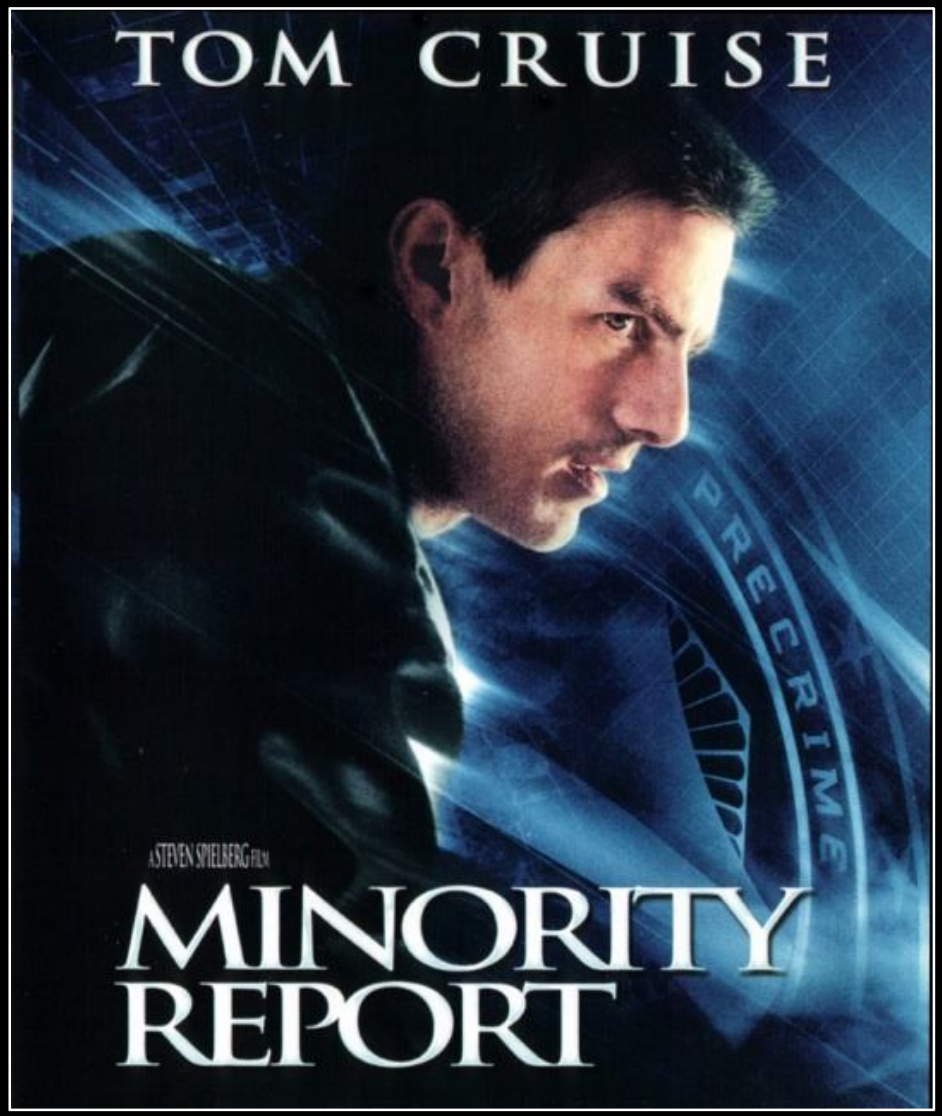

What is Science and what is Fiction?

Can early stages of dementia be detected and then continously analysed by extracting individual communication patterns?

“ BIG BROTHER IS WATCHING YOU! ”

- From the novel ‘1984’ by Orson Welles (1949)




TOM CRUISE
PRECRIME
A STEVEN SPIELBERG FILM
MINORITY REPORT

What sayeth the current laws?

Users of mobile location services:

- must be protected by privacy safeguards,
- must be fully informed of the purposes of the usage of the mobile location services, and
- must have the right to determine the use of their personal information.

Conclusions from the laws:

The user is the logical owner of such kinds of private information, as the rights for controlling that information is strong and is increasingly made stronger.

The user should be in control and be able to make informed decisions.

- *The user should be able to see and control what is allowed or not under certain circumstances.*

The European telecommunication directives discuss the idea of a user's right to choose whether to grant (opt-in) or deny (opt-out) any use of information regarding himself at any time.

This also leads to the possibility of a user temporarily disabling a service.

A on/off option is thus required.

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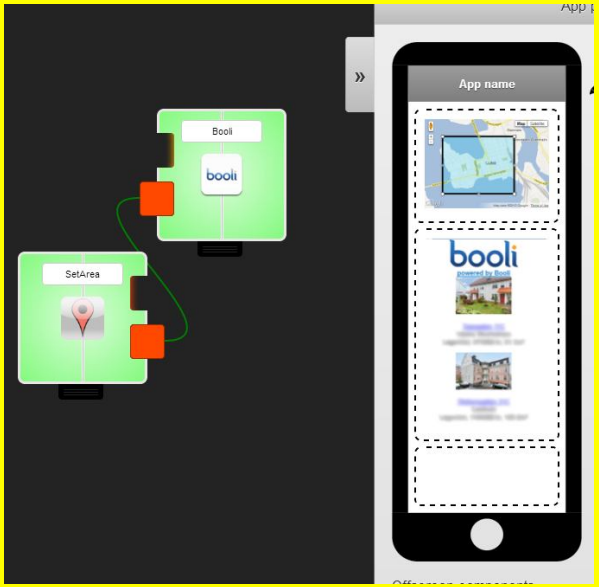
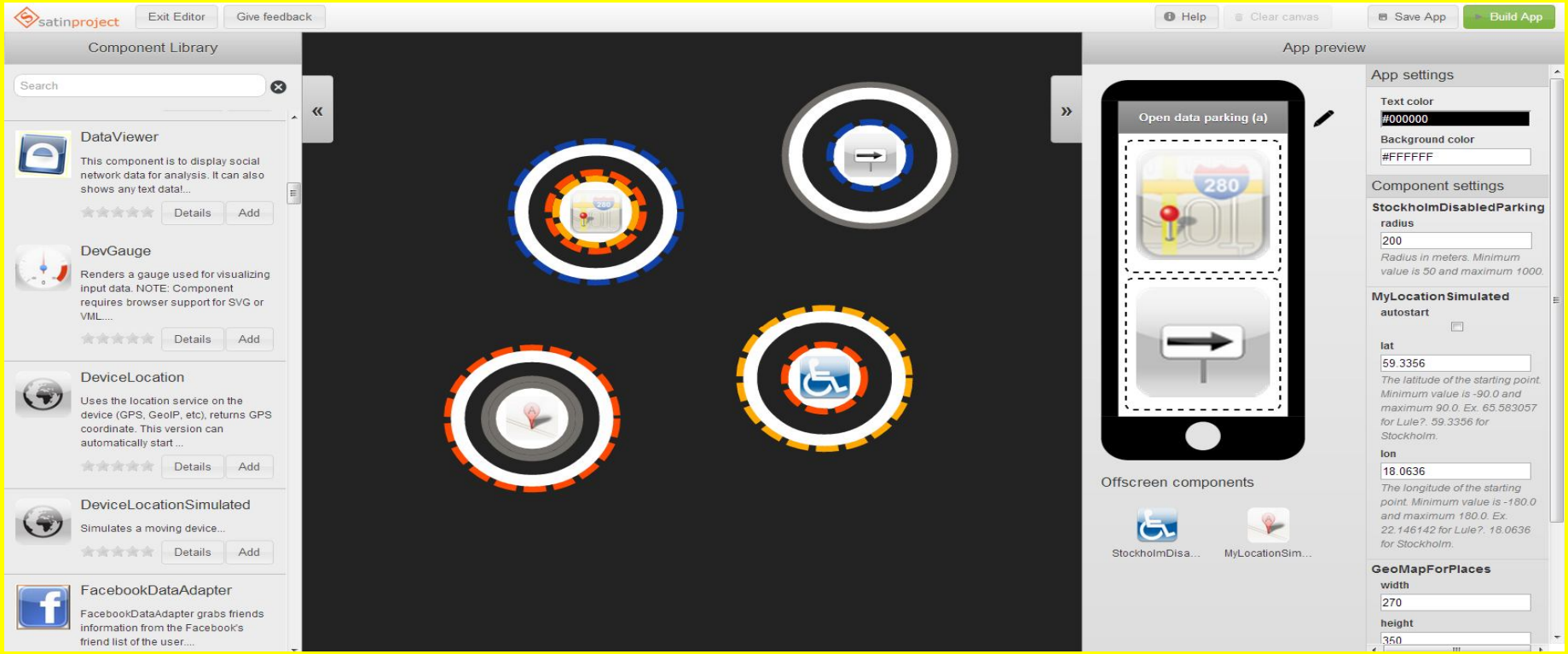
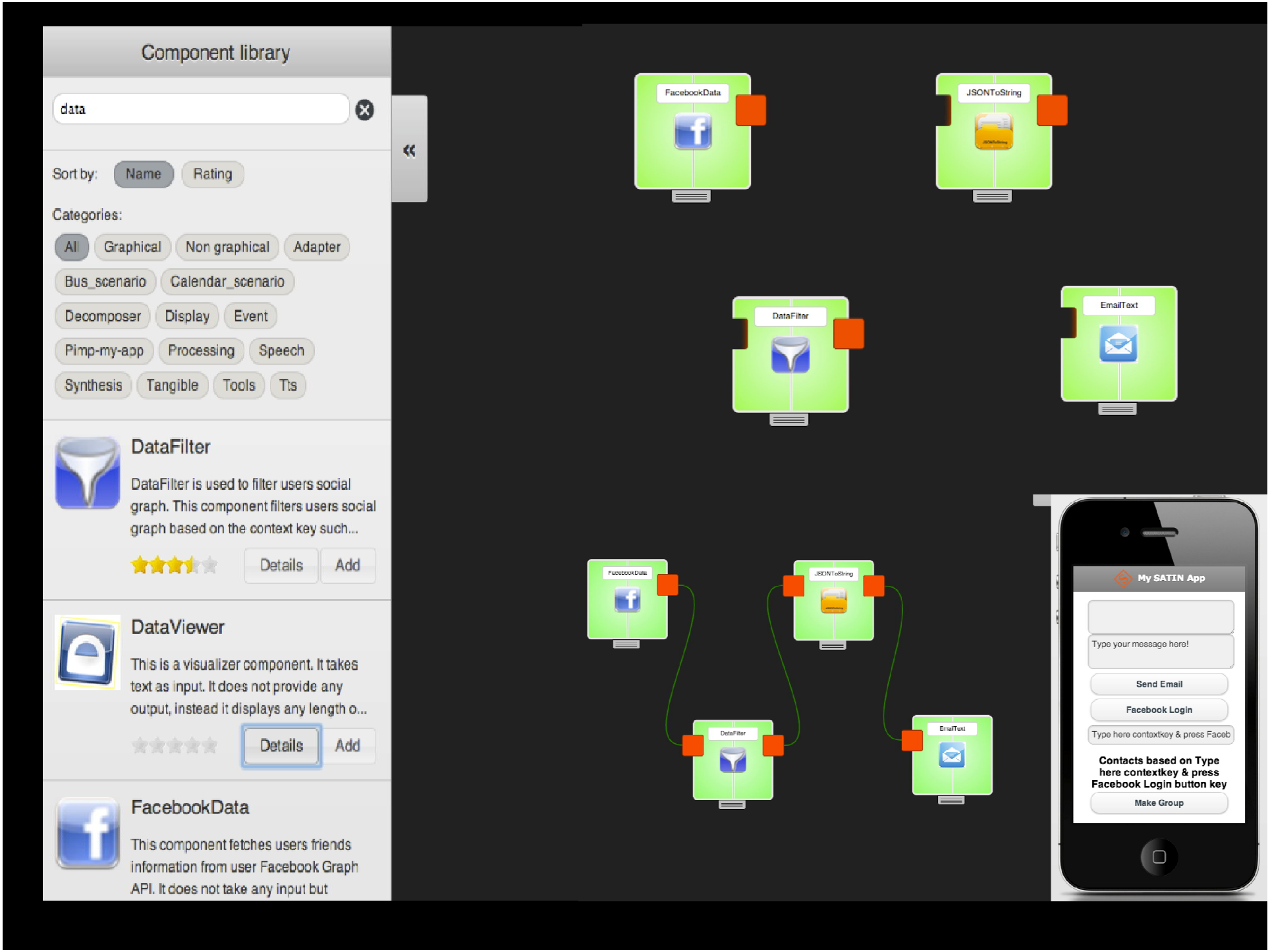
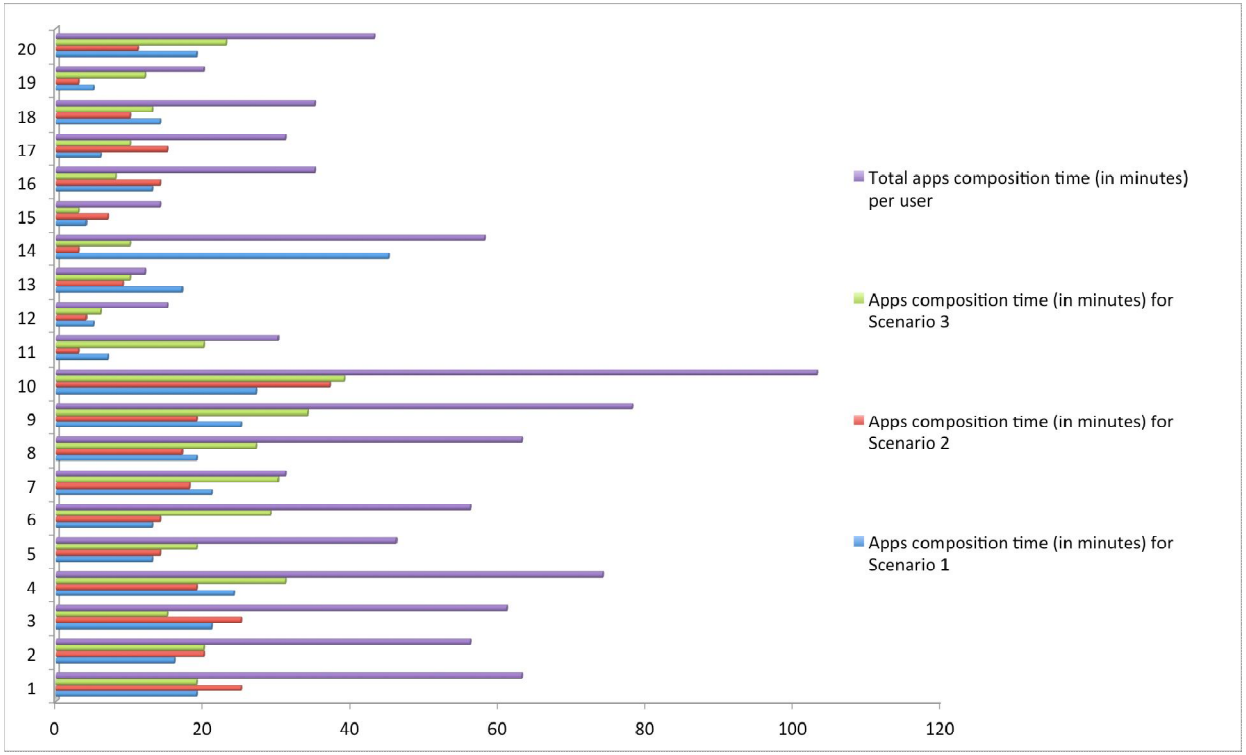
Social App Composition

SATIN
PROJECT






Component library
data
Sort by:
Name
Rating
Categories:
All
Graphical
Non graphical
Adapter
Bus_scenario
Calendar_scenario
Decomposer
Display
Event
Pimp-my-app
Processing
Speech
Synthesis
Tangible
Tools
Tts
DataFilter
DataFilter is used to filter users social graph. This component filters users social graph based on the context key such...
Details
Add
DataViewer
This is a visualizer component. It takes text as input. It does not provide any output, instead it displays any length o...
Details
Add
FacebookData
This component fetches users friends information from user Facebook Graph API. It does not take any input but
FacebookData
JSONToString
DataFilter
EmailText
My SATIN App
Type your message here!
Send Email
Facebook Login
Type here contextkey & press Faceb
Contacts based on Type here contextkey & press Facebook Login button key
Make Group



Social apps composition time on a user basis considering three different composition scenarios.

Parameter	User's with programming knowledge	User's without programming knowledge
App composition time	Avg.: 10.967 minutes (SD=4.8688)	Avg.: 22.3 minutes (SD=5.2357)

In general, we found avg.: time 16.6335 minutes (SD = 7.6166) is required for composing apps based on the given scenarios.

Tailored Tools for Group Communication

Home

STUK

Widgets

File Share

Google Maps

WolframAlpha

Notes

Task Board

File Share

Invited

Recommended

Zillur Rahman

Danesh Daroui

Michael Burakov

Jens Eliasson

Blerim Emruli

Niklas Frisk

Andrey Boytsov

Mikael Börjeson

Md. Minhaj Alam

Seraj Al Mahmud Mostafa

Mohsin Azhar

Invite users to STUK

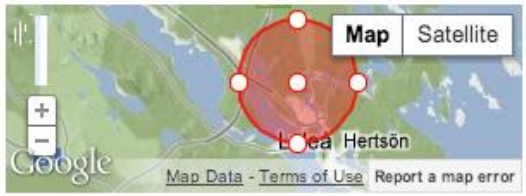
X

Lulea University of technology

Discover Participants

Adjust context using social strength and proximity radius

Min Strength: 0 **Max Strength: 100**

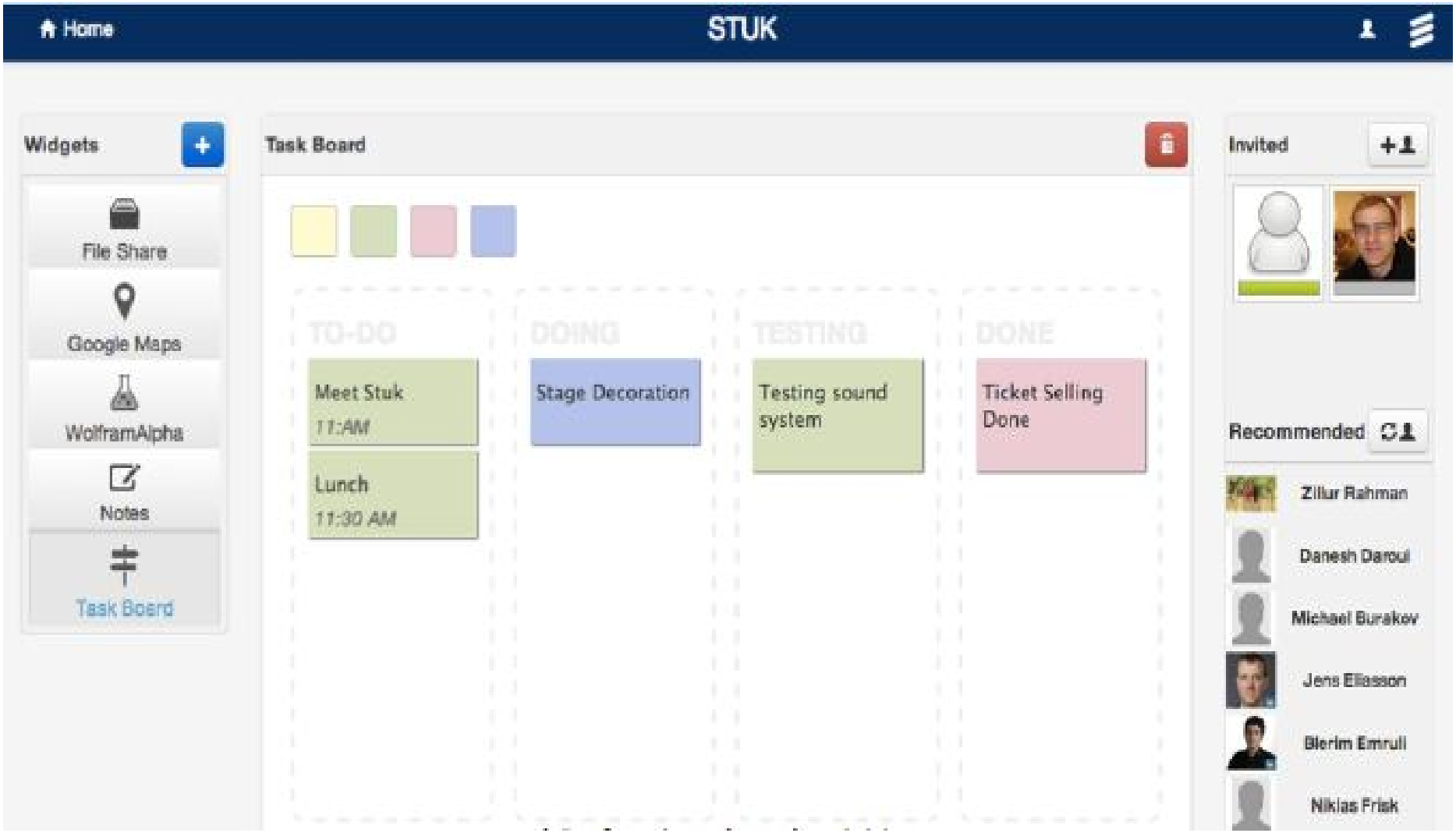


Fredrik Sandin Invite

Arman Farahzadeh Invite

Mikael Larsmark Invite

Close


Home
STUK
Widgets
File Share
Google Maps
WolframAlpha
Notes
Task Board
Task Board
TO-DO
Meet Stuk
11:AM
Lunch
11:30 AM
DOING
Stage Decoration
TESTING
Testing sound system
DONE
Ticket Selling Done
Invited
Recommended
Zillur Rahman
Danesh Daroui
Michael Burakov
Jens Eliasson
Blerim Emruli
Niklas Frisk

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"The best way to predict the future is to invent it."

–Alan Key, Apple Computer Inc.

Thanks for your attention!

Contact me!

Kåre Synnes

Email: unicorn@ltu.se

Phone: +46 70 361 1507

Skype: karesynnes

Google: kare.synnes@gmail.com