

Human-Centred Research and Design in Crisis

CS-E4002, Summer 2020

Prof. Nitin Sawhney

TA: Magda Mihalache



Aalto University
School of Science

hcrdcrisis2020.wordpress.com

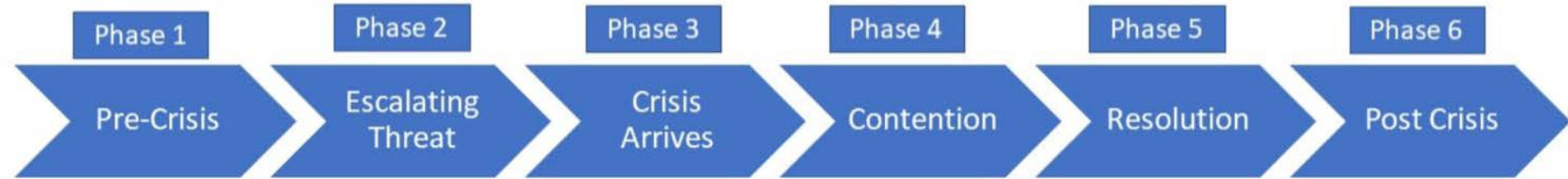
Course Outcomes

Understanding of how **human-centred research, design** and technological innovations can productively engage the complex challenges emerging in **crisis contexts**, including natural and man-made disasters, socio-political crises, and the COVID-19 pandemic.

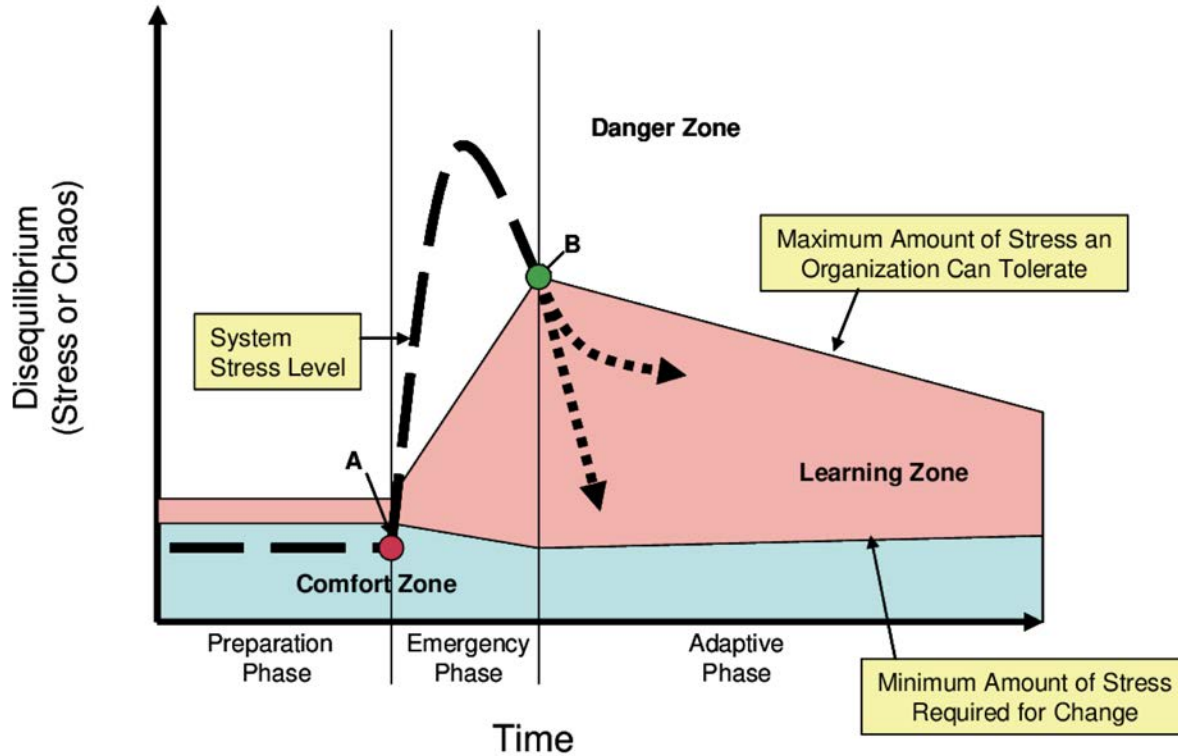
Critical skills to recognize the limitations and **ethical implications** of conducting **research, participatory design**, and deployment of **technologies** including **security, privacy** and any unintended consequences of such work, while applying rigorous **human-centred design principles** and practices to have a meaningful impact in such crisis situations.



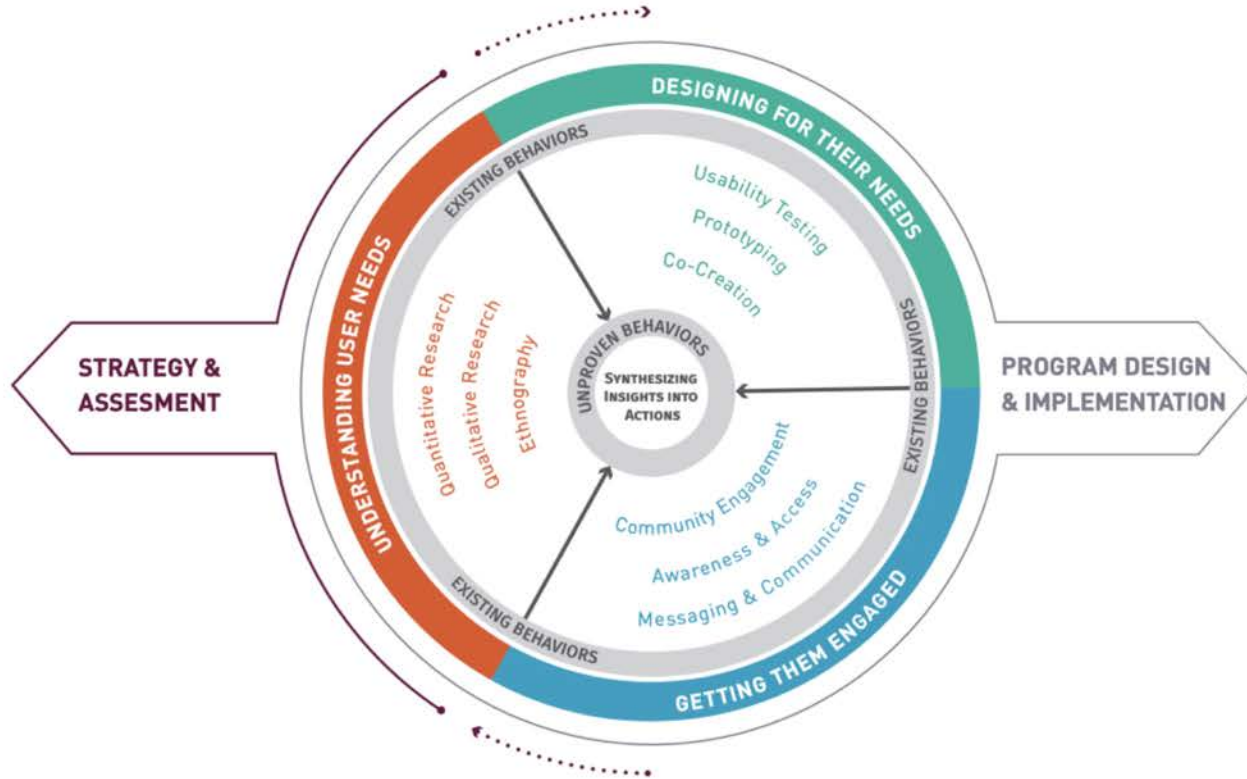
The Crisis Life-Cycle



Crisis Life-Cycle Model



HUMAN CENTERED DESIGN



HCD integrates a broad set of practices around a common understanding of user needs that can improve strategic decision-making as well as increase the effectiveness of individual programs.

Contestational Design

How **Agonism** Transforms
Research & Participatory Inquiry



Partizaning | Moscow

PARTIZANING

Participatory urban replanning.



www.partizaning.org

ПАРТИЗАНИНГ

Партизанские городские перепланировщики.

Красный май: Подборка
ситуационистских плакатов
Агитационные образы Парижа 1968-го



Tactical DIY Urbanism as Artistic Research Practice



Partizaning | Moscow

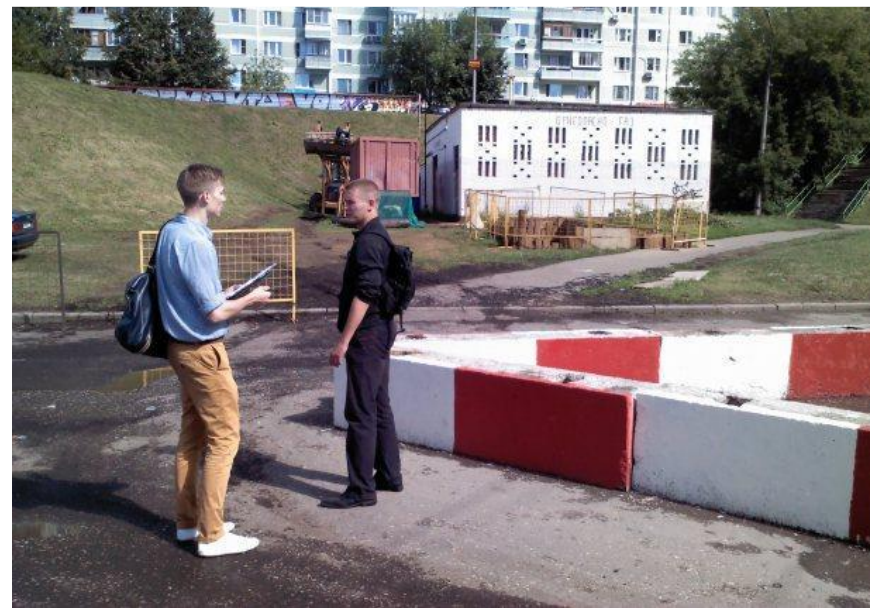
Strelka Institute for Media, Architecture and Design



Design Workshops, Moscow, 2012-2013

КООП.

CO-OPERATIVE URBANISM



Occupy Moscow

MICRORAYONS

EVERYDAY LIFE STRATEGIES AND D.I.Y. PRACTICES IN THE POST-SOVIET MICRORAYON

After the Second World War the Soviet Union became a prolific producer of low-budget social housing schemes. As in some Western European social democracies, social housing in the former Soviet Union used to be a public service. Under General-Secretaries Khrushchev and Brezhnev millions of high-rise prefab apartments were built according to similar standards all described in a catalogue. These so-called microrayons are still used in many of the nations that were once part of the Soviet Union.

Although the design of these city quarters is identical, their realization and completion differed from city to city. Roughly speaking, it seems that the microrayons along the periphery of the Soviet Union were not as good as those in Moscow, the center of power. We decided to work with two local teams in the capital but also in a city on the edges of the former USSR. Comparing two urban microrayons namely Gldani, a suburb of the Georgian capital Tbilisi, and Veshnyaki, in the outskirts of the Russian capital Moscow, striking similarities and differences come to the fore. One of the differences is the degree to which residents adapt themselves to the architecture. The inhabitants of Veshnyaki adapted themselves more to their microrayon, whereas Gldani's users adapted the design to their preferences.

In both suburbs living conditions have changed quite a bit since 1990. The transformation from state regulation to market economy brought residents benefits, but also the risk of poverty, corruption and identity politics. Moreover, local project developers, architects and politicians have little love for microrayons. As a result innovative redevelopment is mostly concentrated on historic city centers. In the poorer cities of the former Soviet Union the construction of the microrayon has often passed its expiration date. On the opposite, occasionally microrayons are able to preserve some of the idealism of their socialist blueprint. Local communal life is not as disintegrated by commercial interest as in city centers. In addition, since microrayons are of little interest to those in economic and political power there is space for experimentation.

Taking these observations as a point of departure, we started working on an inventory of user strategies for the microrayon. The ambition is to fight neglect by designing alternative social housing scenarios based on local habits, strategies and D.I.Y. practices. Instead of approaching the construction of the microrayons in a formal architectural way, we intend to focus on the human scale and learn from everyday life. Before coming to redevelopment scenarios a first step is to make an inventory of residential, official and informal user strategies. We then plan to highlight those focused on cultivating, owning, socializing and trading. Thereafter we intend to develop a set of renewal scenarios for microrayons.



II USE



In order to get a general idea of how residents appreciated living in their microrayon, we asked them a series of questions regarding their environment and their neighbors.



FEELING AT HOME

Feeling at home somewhere is a cocktail of feeling safe in a space and feeling responsible for that space. You feel safe and more responsible in your own apartment, with the sense of home decreasing with every block you pass.

GLDANI
FOR WHAT DO YOU FEEL RESPONSIBLE?

VESHNYAKI
WHERE DO YOU START TO FEEL AT HOME?

Apartment

Apartment

Corridor

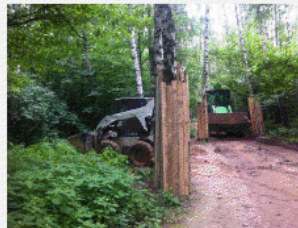
Courtyard





Troparevo-Nikulino Park Path Reconstruction

date added: 20/07/2012



Several years ago, a group from the community approached the municipality with the problem of fixing asphalt roads that run in the Troparevo Forest Park. In 2009, plans were drawn up and presented to the community. People realized that the asphalt paths were not just going to be fixed, but would also be expanded and that a significant budget was being allocated to construction inside for the forest.

👍 0

status: **ongoing**



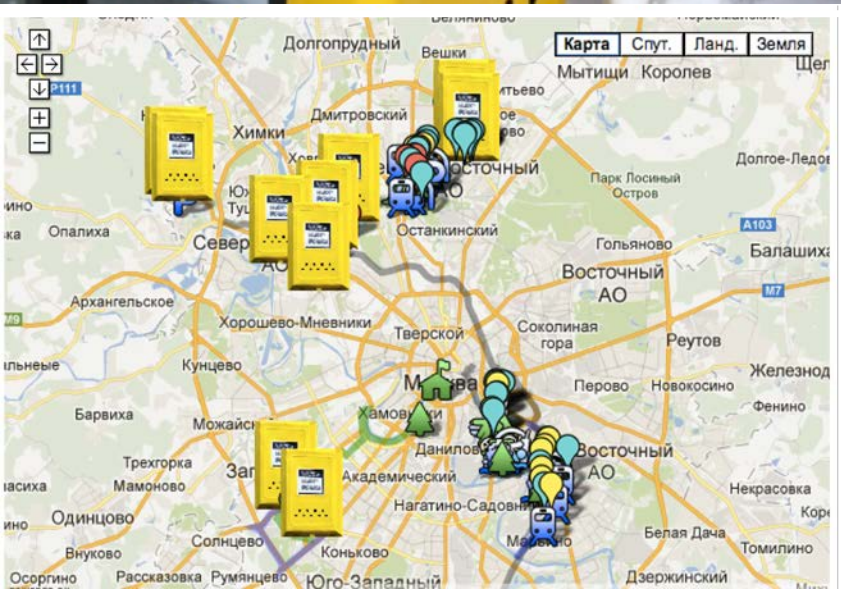
The ecosystem balance which is currently very healthy and well maintained is being disrupted. The repair and reconstruction of the park is currently ongoing and the Department of Forest Preservation is also introducing non-native plant species.

tags:

environment, construction, degradation, infrastructure, forest, park, sustainability, ecosystem, biodiversity, trees, troparevo-nikulino



suggested actions



Antagonistic Participation: Public Interventions Tagged Online & Offline

MikroACT USER EXPERIENCE

QUICKLY NAVIGATE BETWEEN PROBLEMS AND SOLUTIONS

MAKE THE NARRATIVE HIERARCHICAL, MOST IMPORTANT "NEWS" 1ST

The screenshot shows the SynchroniCITY website interface. At the top, there are navigation tabs for "Problems" and "Solutions". Below this, a grid of posts is displayed. Each post includes a title, a date, a location, and a brief description. Some posts have images. A red dashed box highlights a specific post about "Troparevsky Park" and another about "Unfinished in...". A yellow circular button with a plus sign and the text "Add a problem" is overlaid on the bottom right of the grid.

INTEGRATE MAPPING?

HOW TO VISUALIZE PROBLEMS + SOLUTIONS

MAKE "ADD A PROBLEM"



The screenshot shows the SynchroniCITY website interface, displaying a list of posts. The posts are arranged in a grid. Each post includes a title, a date, a location, and a brief description. The posts are in Russian. The website has a clean, modern design with a white background and blue accents.

Hi, there! MicroAct is a space for sharing the small a



Susan Harbage's U.S. Mexico Border Interventions



Hammock to transform a border fence.



Jessica Walsh and Timothy Goodman's kindness "wall" around Trump Tower in NYC.

1



Excellent way of marking from Kazakhstan's Gu Agency. Attention grab

christo Tactical Border Projects



Trash Bins as Backpacks – a way of dealing with litter.

1

Shriya Street art



Bodies in Urban Space

Shriya

taeyoonchol.com



Occu-bot, automated protest support that shakes a sign on behalf of weary protestors. By Taeyoon Choi

christo · April 29, 2014
27 Microacts · 2 Followers

Follow

Shriya Street art



Balloons transform spy intervention by Spy.

1

Shriya Street art



#NotABugSplat | A giant installation project that predator drone operators thousands of miles away kills as BugSplats. Now they see a child's face instead.

Shriya Pinned 46 days ago

Follow

Replicate Like Zoom

From www.boweryboogie.com



Jay Shella's Metropolitan Etiquette Authority Says Don't Feed the Pigeons

animal activism animal-human conflicts Pigeons

Login to comment...

Login

Replicated onto Signs



Also from www.boweryboogie.com



Replications Shriya onto Animal Activism

christo onto Dumbo Hacks & Street Art

Invisible Borders



foursquare I'm looking for...

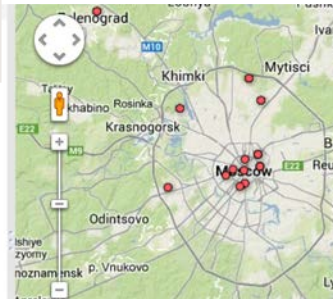
УФМС России по Центральному округу
Средний этаж и жилой блок

Address ул. Кирпильная, 47А
Москва, Москва 127543
Phone +7 (495) 406-09-97

Total Walkers 176 Total Check-ins 605

<http://4sq.com/gisid> SHARE

- Пролетарская пр-д 17/1
- Федеральная Миграционная Служба России
- УФМС России
- City Boundaries 2
- Environmental 1
- Ethnic Cafes 1
- Markets 3
- Transit Hubs 8
- Urban Boundaries 1
- Work Permit Centers 3



moscow.bodr.org

A large crowd of people is gathered at night, illuminated by streetlights and building lights. The crowd is dense, with many people looking towards the camera. In the background, there are trees with yellow autumn leaves and tall buildings. A prominent yellow banner with the text "#OCCUPY WALL STREET" is held across the middle of the crowd. The scene is set in an urban environment, likely Wall Street in New York City.

#OCCUPY WALL STREET

Examining Technology used by Citizen Activists during Occupy Protests



#SEARCHUNDEROCCUPY

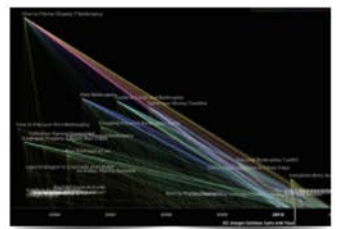
EXHIBITED MARCH 1 - APRIL 1, 2012
CONTINUES AS A LIVING ARCHIVE
ONLINE
Arnold and Sheila Aronson Gallery
Sheila C. Johnson Design Center

SUBMIT

A living archive of creative and critical responses to the Occupy Wall Street movement by THE NEW SCHOOL community.

- ABOUT
- EVENTS
- GALLERY
- SUBMIT
- OWS & TNS

SPOTLIGHT



#OCCUPYDATA HACKATHON



ART PRODUCTION AS A DEMOCRATIC PROCESS

GALLERY



VOICES UNHEARD



KAREN'S STORY



OWS PODCASTS

#SEARCHUNDEROCCUPY

932

Events Gallery

#OccupyData Hackathon
Mar 30, 2012

Art Production As A Democratic Process
Mar 30, 2012

TEACH-IN WITH MARTIN LUCAS
Mar 29, 2012

REMIX WORKSHOP
Mar 28, 2012

#OCCUPYDATA

SearchUnderOccupy.org

#OCCUPYDATA HACKATHON



9.28.12-9.29.12
12-6:00 PM
THE GRADUATE CENTER
City University of New York



occupydatanyc.wordpress.com

CREDIT: "Income Inequality in the United States, 1913-1998" with Thomas Piketty, "Occupiers Journal of Economics, 18(1) 2010, 1-24, Tables and Figure Updated to 2010, March 2012"

#OCCUPYDATA HACKATHON 2

MARCH 23-24, 2012. #OCCUPY DATA SETS. DIFFERENT LOCATIONS



BEST CREDIT CARD DEALS

#OccupyData Hackathon II: Data Visualization for the 99%!

March 23-24, 2012

12pm to 6pm on both days

Held in conjunction with the
#searchunderoccupy exhibition
searchunderoccupy.org

Arnold and Sheila Aronson Gallery
Sheila C. Johnson Design Center
66 Fifth Ave., New York, NY

Event co-organized by Prof. Nitin Sawhney
and Christo de Klerk (School of Media Studies)



Unprecedented amounts of media and data were generated during the Occupy Wall Street protests last fall and continue to emerge through the ongoing movement. Join us for a 2-day collaborative Hackathon to explore, visualize and learn from such this living data archive.

During the 2-day event, we will be connecting and collaborating with other such Hackathons taking place in Cambridge, Los Angeles, San Francisco, Oakland and Washington D.C.

This event is not only for designers and hackers, but for anyone interested in the Occupy movement with experience in media production, journalism and research. Bring your ideas, skills, creativity, questions and critical perspectives as we look for ways to transform media and data collected from Occupy Wall Street into visualizations and data driven interventions!

Some of the data sets we will have access to include survey research data, twitter activity, user contributed audio/video footage online, as well as data on privately owned public spaces in New York City. Final outcomes will be showcased in the gallery as well as online in various forums.

The event is being jointly organized with
OccupyResearch, DataCenter, R-Shief Labs,
and the MIT Center for Civic Media.

For more information visit:
<http://bit.ly/occupyhackathon>

To sign-up please register for the event here:
<http://goo.gl/7nm58>

For more info or questions contact:
occupyresearchnyc@gmail.com



Open	High	Low	Close	Change	Volume
12,965.69				Up 15.82	
2,948.57				Down 3.21	
1,362.21					
AT&T	30.34		30.34	+0.33	
AlcatelLuc	2.57		2.57	+0.12	
Altria	29.62		29.62	-0.03	
AmEx	52.85		52.85	-0.01	
AIG	27.33		27.33	+0.10	
Apple	514.85		514.85	+12.73	
BkofAm	8.11		8.11	+0.09	
BanqueParibas	10.84		10.84	0.67	
HomeDp	46.92		46.92	+0.21	
Intel	27.16		27.16	-0.21	
IBM	193.39		193.39	-0.03	
JPMorgCh	28.46		28.46	-0.01	
JohnJn	65.04		65.04	+0.05	
Macys	36.69		36.69	+0.44	
McDs	100.49		100.49	+0.50	
Microsoft	29.12		29.12	0.00	
HewlettP	29.35		29.35	-0.24	

OccupyData Hackathons: Participatory Inquiry of Social-Justice Narratives





projects, tools and scripts

OccupyMosaic

OccupyMosaic is a site originally developed after the May Day 2012 day of action to show a visual narrative of the events that happened that day. The site uses a crawler to scrape data from the Twitter API, as well

September 29, 2012 / Comments Off on OccupyMosaic



process, projects, visualizations

Using a free Jogging app to GPS map unofficial private space in Zuccotti Park (OWS)

September 29, 2012 / Comments Off on Occupy's One Year Anniversary: A Twitter Story



datasets, process, projects, visualizations

Connecting Occupy

This project examines connections among Occupy groups through project partnerships.

May 19, 2012 / 3 Comments



process, projects

Occupy Video as Data: Visualizing Temporal Narratives

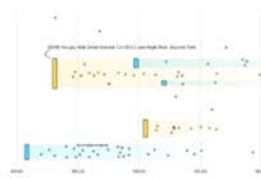
How do we make sense of specific events occurring during the Occupy

visualizations

Free University Course Analysis

Notice: This project is still in process. Project Description: For this project, we are looking at course descriptions and titles from the May Day and Sept. 18-22 Free Universities (for information on the Free University, please visit: <http://freeuniversitynyc.org/about-the-free-u/principlesidentity/>). We are

September 29, 2012 / Comments Off on Free University Course Analysis



process, projects

Occupy Video as Data presentation at NYU, 4/18

Last week, a few Data Occupiers went to NYU to present to the "Topics in Visual Culture: Politics of Visual Display" class at NYU: among other things, we talked about our [Video as Data project](#).

April 25, 2012 / One Comment



datasets, process, projects, tools and scripts, visualizations

is the occupy movement getting more colorful?

post by srl0 and christo Occupyprint.org collects and distributes posters inspired by Occupy movements all around the world. For the May 18/19th hackathon, our group looked at Occupyprint's collection of almost 400 posters. Our main aim was to explore possible

May 20, 2012 / 3 Comments



projects, visualizations

citizen data sets and twitter bot guards of public space

Robots have been firm supporters of the Occupy movement, taking up protest signs where human arms grew weary. Mechanical automation does not need to be the exclusive domain of the physical. Indeed, drawing attention to those public



process, projects

Occupy Video as Data: Visualizing Temporal Narratives

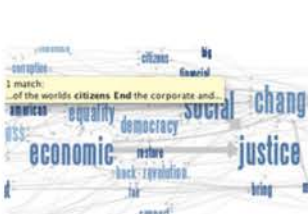
How do we make sense of specific events occurring during the Occupy movement through narratives emerging from social media over time? When an NYPD officer pepper sprays peaceful protestors, the event is immediately captured on camera phones with subsequent citizen

March 24, 2012 / 3 Comments



that he produced of bankruptcy related

March 26, 2012 / Comments Off



process, projects, visualizations

Visualization of Q42 "What are you trying to achieve with your participation in the Occupy Movement?"

From the Occupy Research Demographic and Political Participation Survey, question #42, "What are you trying to achieve with your participation in the Occupy Movement?" All responses are included, and this visualization shows the 50 most frequently used words (excluding the very

March 24, 2012 / Comments Off



March 31: OWS Archive Day

We will be showcasing some of our outcomes from the OccupyData Hackathon in NYC and outcomes from groups around the country at OWS Archive Day this weekend at Eyebeam. Please join us! OWS Archive Day is at March 31, 2012

March 24, 2012 / Comments Off

process

Day 1 recap: works in progress at OccupyDataNYC

Group 1: State and Space We're using the web service Topsy to search for tweets related to Occupy events and police actions, positive and negative. After cleaning the tweets of web noise, e.g. http://, we visualize the prominence of particular keywords

March 24, 2012 / Comments Off



are listed in bold and

March 24, 2012 / Comments Off



process, projects, tools and scripts, visualizations, working group

State and Space

We're using the web service Topsy and a Ruby script to search for tweets that document police misconduct or benevolence, can be traced back to a specific officer, and are related to Occupy events. After cleaning the tweets of web

March 24, 2012 / 3 Comments



events and hackathons

Photos: OccupyData Hackathon 2 NYC Day 2

Thanks go to Peter Asaro for the photos.

March 24, 2012 / Comments Off

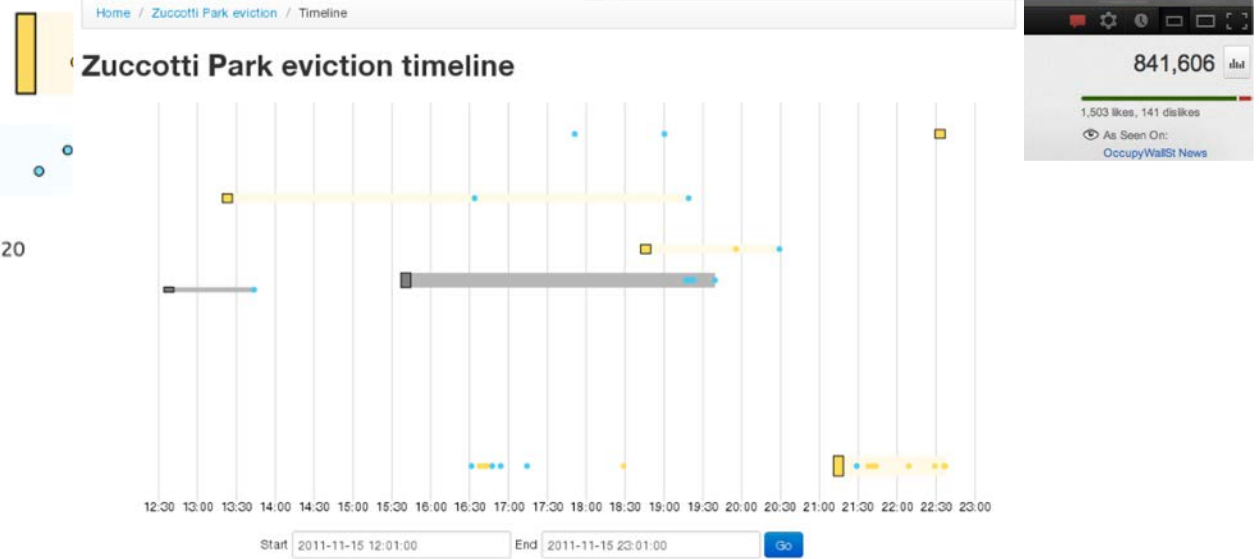
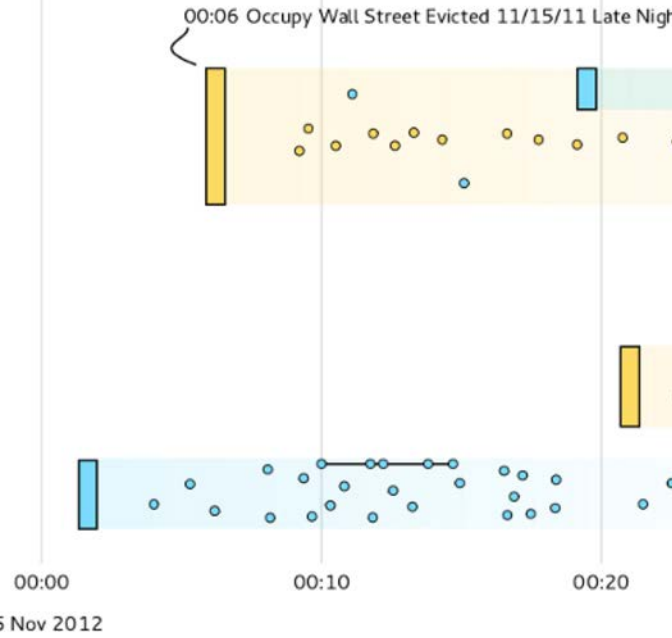


events and hackathons

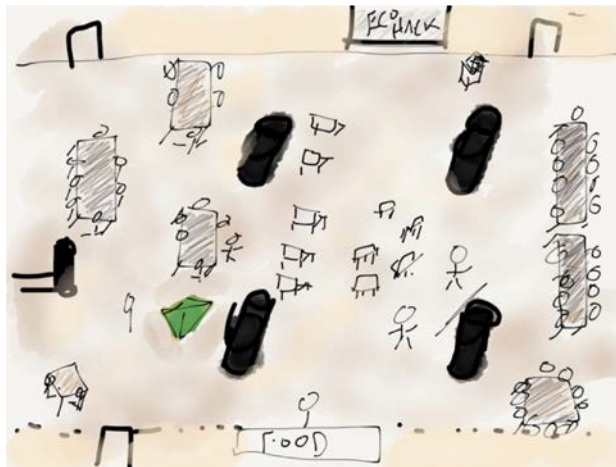
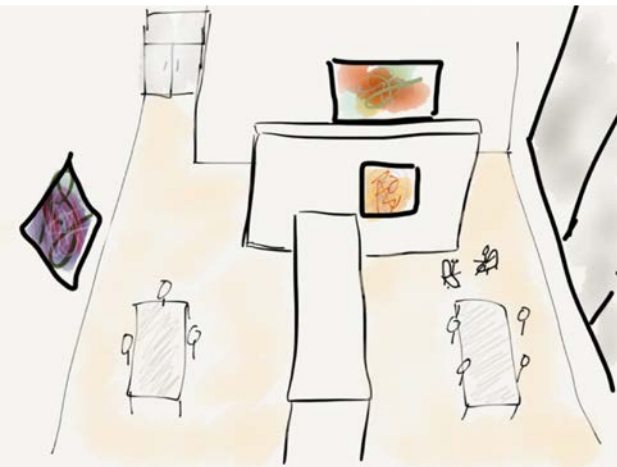
Photos: OccupyData Hackathon 2 NYC Day 1

Thanks go to Farah Momin for the photos.

Occupy Video as Data: Visualizing Temporal Narratives of Police Violence



Ethnography of Hackathons: Spaces for Social Agency & Contestational Design



The People's Skype

A phone-powered, distributed voice and voting system for the #Occupy Movement



call **917-719-2006**

www.peopleskype.org

Illuminating Student Debt

WHAT DOES
MEAN TO YOU?
ENSLAVING
WHO ARE KI
TO MAKE A

STUDENT DEBT
(202)998-3273
THE PEOPLE
KNOWLEDGEABLE
DIFFERENCE...



Illuminating Student Debt

THE GENERAL REVENUE
CORPORATION
ADDS 25% TO
THE LOAN AS A
COLLECTION FEE

Politics of Identity, Values & Inclusivity

Recognizing inherent Power, Privilege, and Social Dynamics
Influences of class, gender, race and cultural norms

Negotiating Domain Expertise and Fostering Inclusivity

Revealing Shared and Conflicting Values in Design Research

Course Structure

Part 1: Weekly lectures & workshops (3 credits)

WEEK 1: Understanding Crisis and Role of Human-Centred Design

WEEK 2: Role of ICT, Interaction Design & Data Science in Crisis Response

WEEK 3: Challenges of Security and Privacy in Crisis Contexts

WEEK 4: Conducting User Experience Research for Healthcare Contexts

WEEK 5: HCI and Situational Awareness for Crisis Response

WEEK 6: Crisis Informatics and the Role of Social Media

WEEK 7: Project Concept Presentations

Part 2: Weekly lectures & studio sessions (3 credits)

Collaborative Research & Design Project

Course Requirements

Part 1:

- Participation in weekly seminars & workshops with guest lectures
- Reading articles, papers and resources suggested for weekly topics
- Weekly reflections and 3 brief assignments on the course blog
- Collaborative Project Concept Paper on Human-Centred Design in Crisis

Part 2

- Participation in weekly sessions recommended
- Group project with a proof-of-concept idea or working prototype
- Final paper of project outcomes for presentation at the end of the course.

Human-Centred Research and Design in Crisis

Computer Science Course CS-E4002 :: Aalto University :: Summer 2020

[About](#) [Weekly Sessions](#) [Readings](#) [Blog](#) [Bios](#)



A?

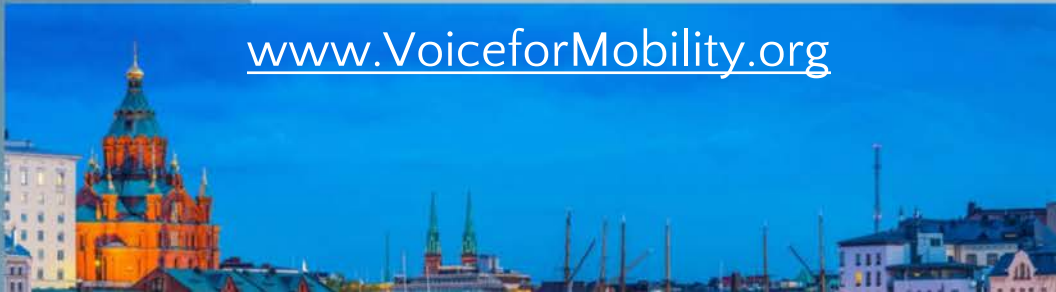
Reimagining the role of Human-Centred Research and Design in Crisis

 Follow ...

Human-Centred Voice-enabled Symptom Monitoring & Urban Mobility Services for Travelers and Vulnerable Residents in Helsinki & Tallinn

Voice for Urban Mobility will offer voice-enabled symptom monitoring and urban mobility services via mobile apps and public kiosks to **vulnerable residents** and **travelers** between **Helsinki** and **Tallinn**. In the midst of the **COVID-19 pandemic** and urban crisis, there is a need for responsive, **inclusive** and **accessible** services to residents and travelers to assess their **ecological health** and **well-being**, adopt effective **urban behavioral changes**, and support **safe mobility** across cities to mitigate these effects.

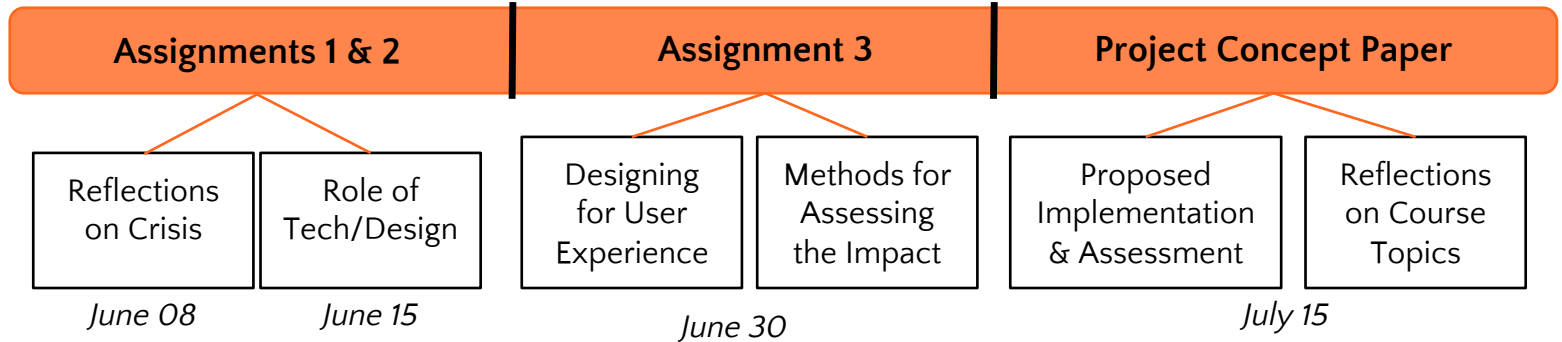
www.VoiceforMobility.org



Part 1. Course Roadmap

Introduce
yourself on
the blog

June 03



Platforms used during the course

MyCourses

Post blog links

Wordpress Blog

Publish assignments
Peer Reviews

Slack

Ask questions
and discuss
about topics

Zoom

Attend live
seminars &
workshops

Panopto

View session
recordings



**Orientation Session on
blog & platforms:
Wednesday,
17:15 - 18:45**

Links to Course Platforms

Interactive Online Sessions offered using Zoom:

- Fill in the Consent Form for participating in recorded sessions
- Video recordings archived on Panopto for viewing

Discussions on Course Slack Workspace:

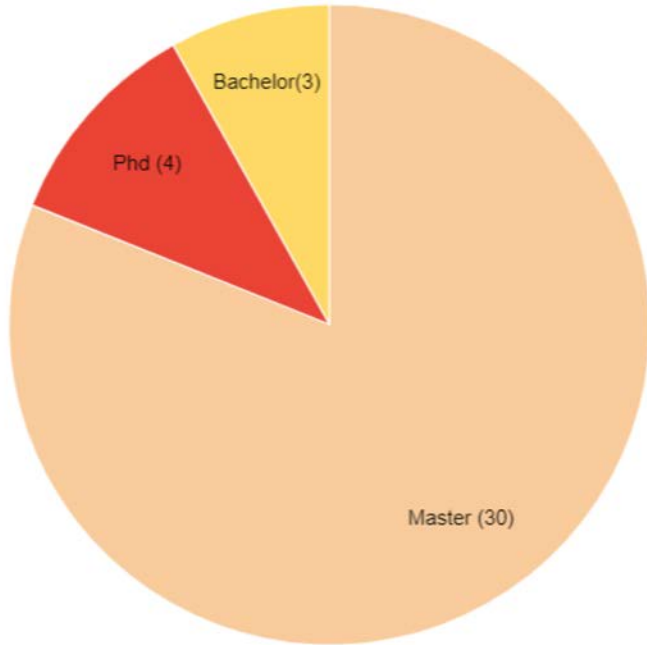
aalto-hcrdcrisis-2020.slack.com

Reflections and Project Updates on Wordpress Blog:

hcrdcrisis2020.wordpress.com

Participants info

Participants Background



Diverse skills

- Human-Computer Interaction
- Software engineering
- Service Design
- Information Networks
- Machine Learning, Data Science and Artificial Intelligence
- Collaborative and Industrial Design
- Creative Sustainability
- Visual Cultures, Curating and Contemporary Art
- New Media Design and Production
- Economics and Business Administration
- Visual Communication Design
- Fashion, Clothing and Textile design

Participants info

Interesting projects

- Promoting sustainable consumption in Vietnam
- Research at the international design centre in Singapore
- Design-based education in Netherlands
- Participatory design project with rural hospital in Australia
- Capability program at Swinburne University
- Project at Harvard Law School focused on applying design methods to challenges faced by asylum-seekers in Boston
- Recruitment apps
- Digital health
- Building web applications & designing websites

What you wish to learn

- Stakeholders involvement
- Ethical concerns
- Participatory design
- Research
- Case Studies
- Environmental crisis foresight
- Risk assessments

This Thursday:

*Real-world Challenges of Crisis
and Disaster Management*

Marko Korhonen

*Disaster Management
Coordinator, Finnish Red Cross*



Aalto University
School of Science



www.redcross.fi