Mopsify: Gamified Spatial Crowdsourcing for Content Creation in Location-Based Games

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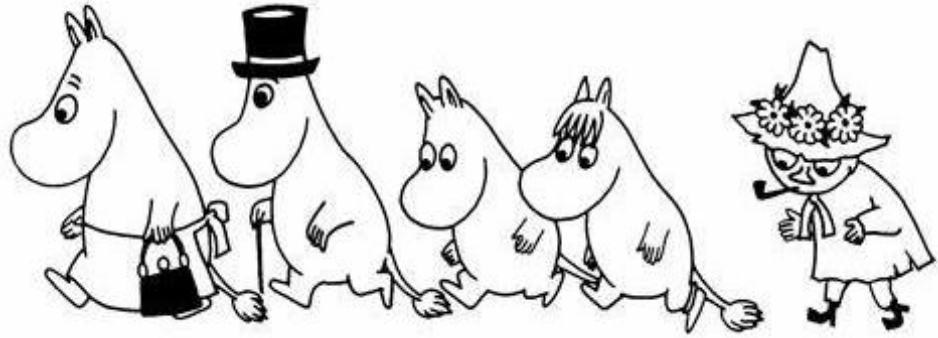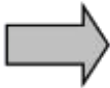

Joensuu

UNIVERSITY OF
EASTERN FINLAND

Happiest country in world

https://thebuzzpedia.com/15-reasons-why-finland-is-worlds-happiest-country/

THE WORLD'S 10 HAPPIEST COUNTRIES

| 1st- Finland | 2nd- Denmark | 3rd- Switzerland | 4th- Iceland | 5th- Netherlands |
| 6th- Norway | 7th- Sweden | 8th- Luxembourg | 9th- New Zealand | 10th- Austria |

Source: World Happiness Report
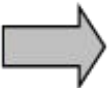
Day of traveller

Let's travel! → Arrival → Sight-seeing → Relax

Location-based game

O-Mopsi

P. Fränti, R. Mariescu-Istodor and L. Sengupta, O-Mopsi: mobile orienteering game for sightseeing, exercising and education. *ACM Trans. on Multimedia, Computing, Communications, and Applications*, 2017.
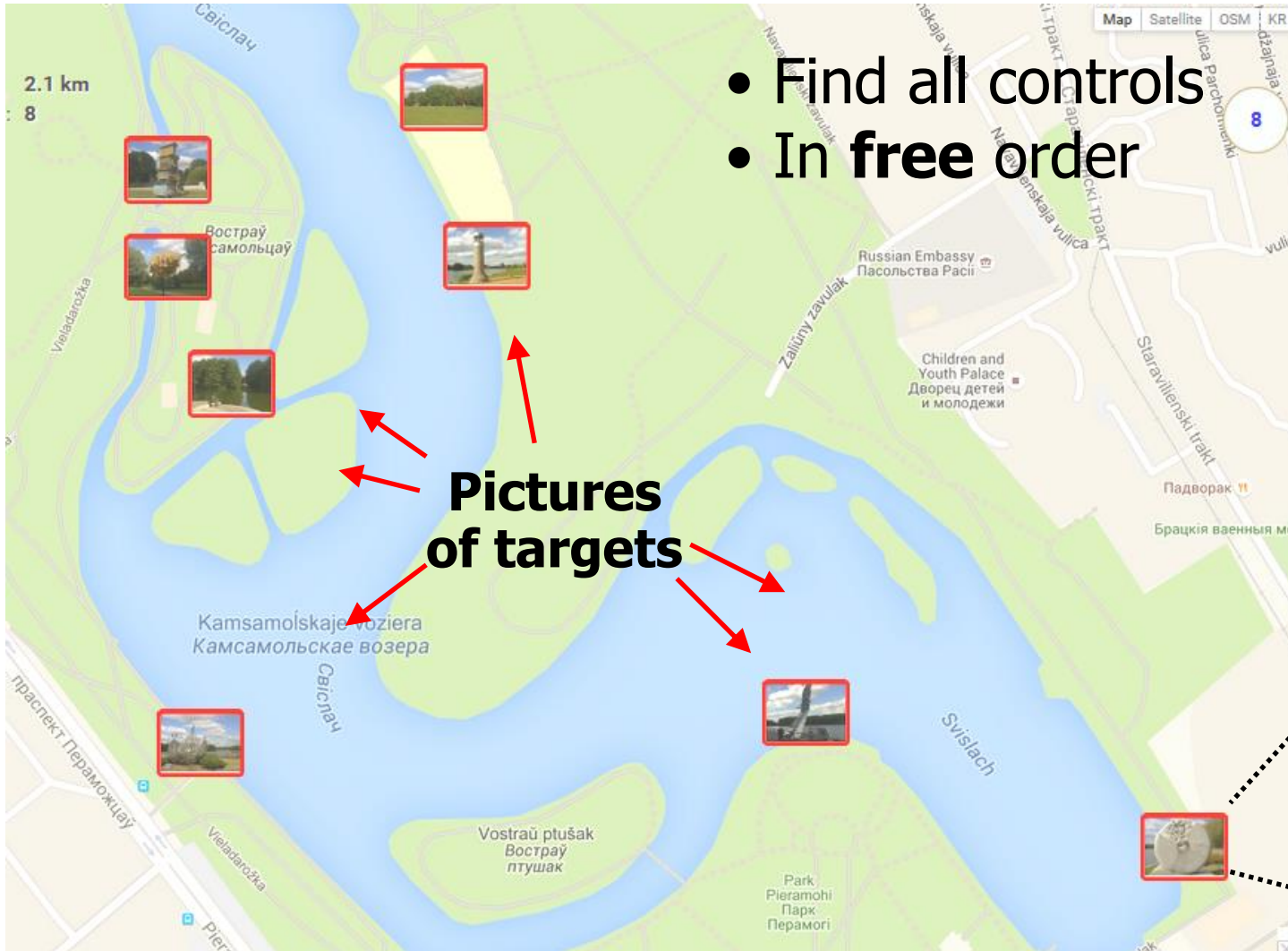
Sight-seeing

O-MOPSI - SCIFEST 2014 MEDIUM

Linnunlahdentie 4, Joer

Distance travelled — 772 m

Elapsed time — 44:39

Visited targets / Total targets — 5/15 visited

Lumikasa

Joensu

Areena

Pukukoppi

Targets

Kuntopolku

Player

Cluster of targets

149 m, E

Linnunlahdentie

−   switch focus   +

Targets in the game

- Find all controls
- In **free** order

Pictures of targets

Smartphone
with positioning

Target

Geographic Distribution of O-Mopsi games

Games: **139**
Length: **3.5 km**
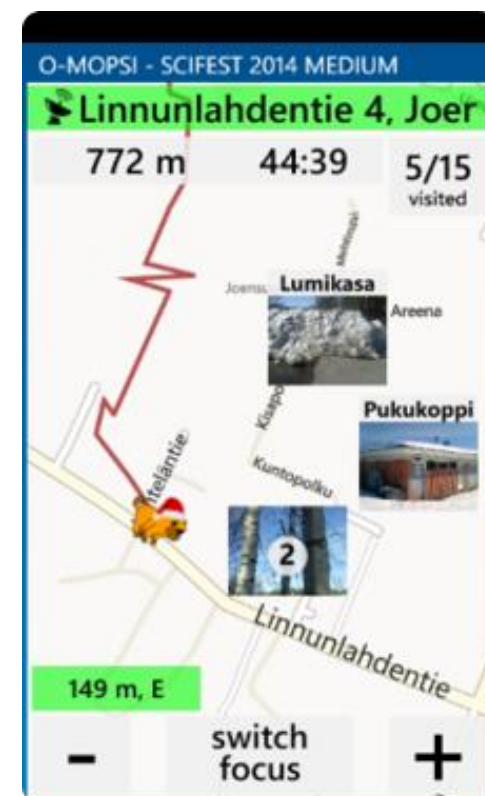Targets: **12**

Content type in location-based games
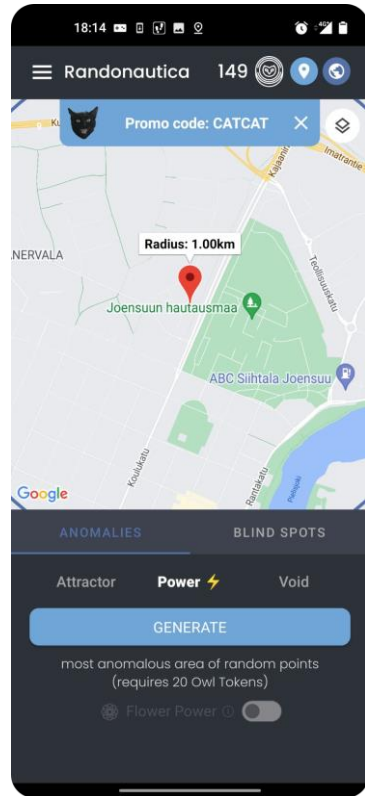
location
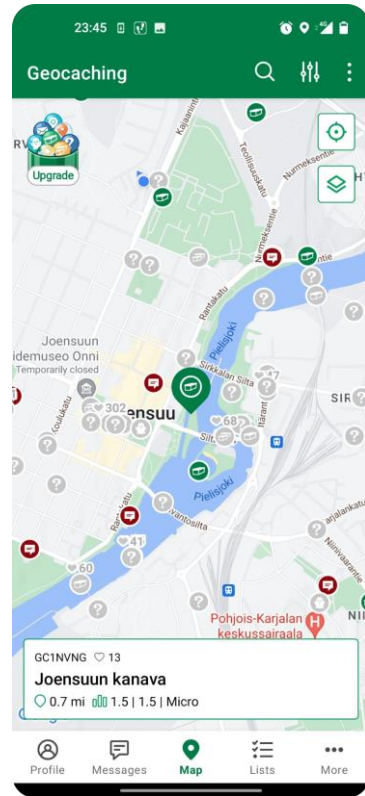
Location, geocache

Location, photo, name

Location, photo, name

Content creation for location-based games

- Target consists of **name**, **location**, **picture**

- Content needed anytime and anywhere

- Five design principles:

    1. Attractiveness
    2. Accessibility
    3. Location clarity
    4. Identifiability
   5. Lifetime of a target

Sources for content

1. Game admins create manually (time consuming)

2. Crowdsourcing (ok if game popular; quality control needed, Long review mechanism, tedious for both content creators and reviewers, subject to error)

3. Web-crawling (geo-tagged photos rare; copyright issues)

4. Open Street Map (photos are missing)

5. Social media (manual Representative image selection, location estimation measurements and relevant name extraction relies on external methods)

6. **Gamified Spatial Crowdsourcing** (**our approach**)

Mopsify Objective

To harness their **combined** power for content creation
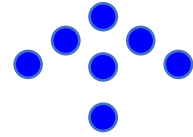
Gamification
- Evokes enhanced contribution
- Intrinsic motivations (purpose, enjoyment, growth, curiosity, passion)
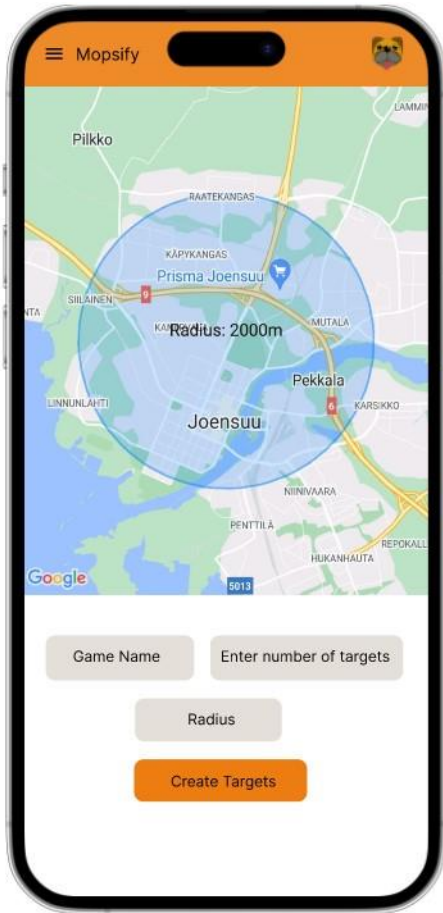
Spatial Crowdsourcing
- Movement in real-world
- Exercise
- Sightseeing

Open Street Map - OSM
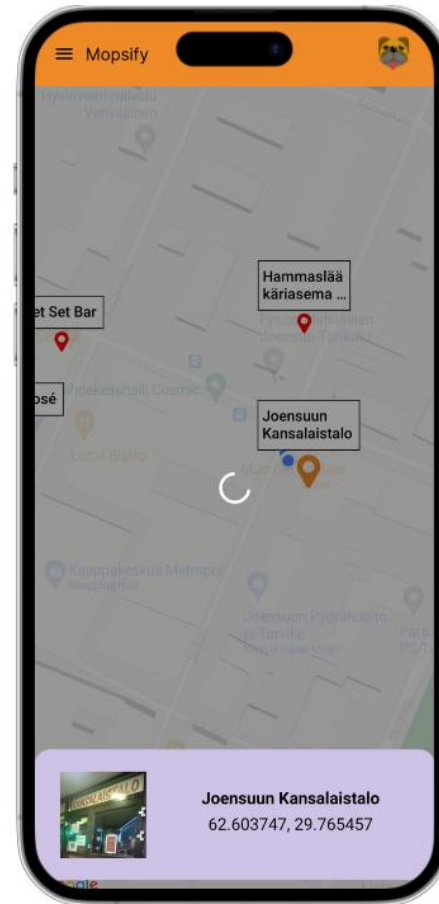- Accurate locations
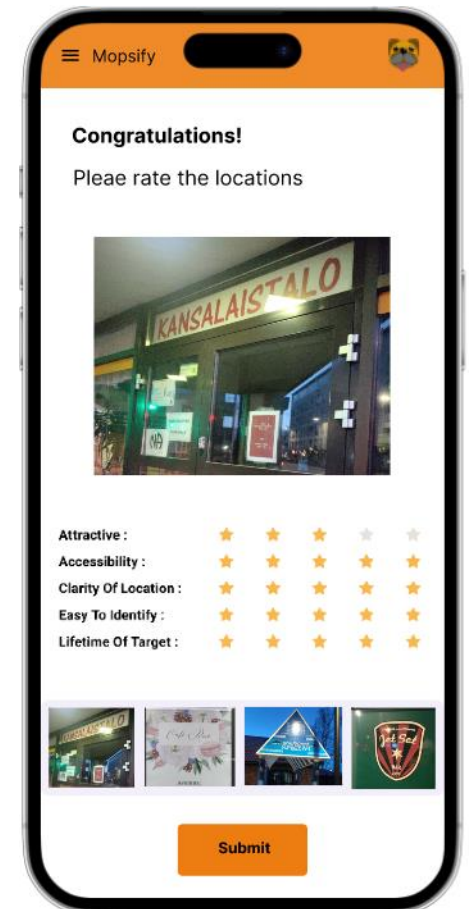- Relevant place names

Mopsify Gameplay

Game Information

Targets are selected

Reaching Target

Player feedback

Experiments and Players Feedback

Games Names: **Kanervala, Keskusta and Kaislakatu**
Region: **Joensuu, Finland**
Length: **2 - 3 km**
Targets: **5**
Players: **2**
Total locations played: **15**
Locations well played: **11**
Inaccessible locations: **4**

- Players expressed hesitation for taking photo of a school, as parents were picking up their Kids at the time of gameplay.
- Places such as schools, fuel stations, community centers and veterinary were reportedly less attractive
- Interesting objects such as statues, fountains, bird towers and benches etc. are also desired by players

Inaccessible Locations

Elias
Hyvinvointi- ja kauneushoitola
(a beauty salon)

Hammaslääkäriasema Otso
Pihiajalinna (medical center)

Punainen Risti - lajittelukeskus
Combat Heaven

Amica
Kreeta

Correct location was not accessible and the players end up taking photo of **other nearby place** to let the gameplay proceed. Reviewers conclude that such cases happened because the actual locations were inside other buildings which were closed at the time of gameplay.

Example Locations well played

POI Name	Café Rosé	Muistelupaikka	Kanervalan koulu	ABC Kanervala	Joensuun vapaaseurakunta
POI Type	cafe	place of worship	school	fuel	place of worship
Attractive	5	5	1	1	5
Accessible	5	3	1	5	5
Clarity of Location	5	3	5	5	5
Easy to identify	5	3	5	5	5
Lifetime of target	5	5	5	5	5

Conclusions and Future Work

- **Accelerated** content creation process

- **Less tedious** for both content creators and reviewers

- **High quality** content generated

- Accessibility issues and OSM data biased nature needs attention