



PUPS

Personalised UbiServices in Public Spaces

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Project objectives



PUPS designs, implements and field tests prototypes of novel ubicomp applications that combine context-awareness with personalisation in order to provide a better user experience in everyday tasks in public spaces

- Aim at novel application ideas and technologies that can be commercialized in a few years time
- Main showcase a shopping mall in Helsinki

Two main pilot applications:

MA\$\$I€

Massive is an adaptive intelligent shopping assistant for customers in supermarkets

 **Funnelry**

Funnelry combines several social media sources (e.g. Facebook and Flickr) into a single, personalised and context-aware mobile web application

Project organisation

The main project research partners are:

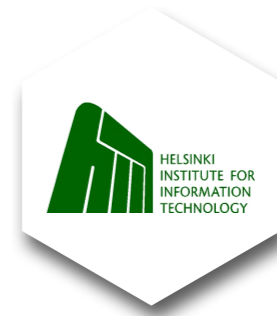
- HIIT: Adaptive Computing group
- HIIT: Complex Systems Computation group
- HIIT: Ubiquitous Interaction group
- VTT: Mobile Interaction Competence Center

The industrial partners and their focus areas are:

- Bitlips: Text-to-speech synthesis
- Ekahau: WLAN indoor positioning
- Elisa: Social media & new business models
- Idean Enterprises: New business models
- Kesko: Retail, customer information
- Nokia: Mobile devices
- Ramblas Digital: Advertising
- Tuulia International: Nutrition information
- Upcode: Two-dimensional barcodes
- Finnish Federation of the Visually Impaired: Services for special customer groups



User modelling



The data

- 14 months of customer data from the pilot supermarket, in total 18.4 million bought items by 170 000 loyalty card holders (almost 100 000 different items in 1.6 million shopping baskets)
- Modelling techniques: probabilistic models (mPCA, logistic regression), association rules, SVD and other collaborative filtering techniques

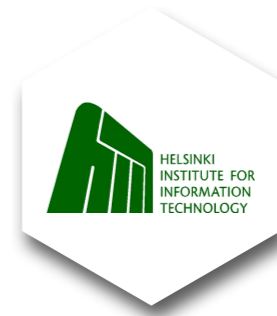


The goals

- To build models that can be used as a recommender system: given your shopping list, and your current location, can we predict whether there are some products (on sale?) nearby that you might be interested in?
- To build models for data mining purposes, to increase understanding about the user profiles / purchasing patterns



Intelligent shopping list planning



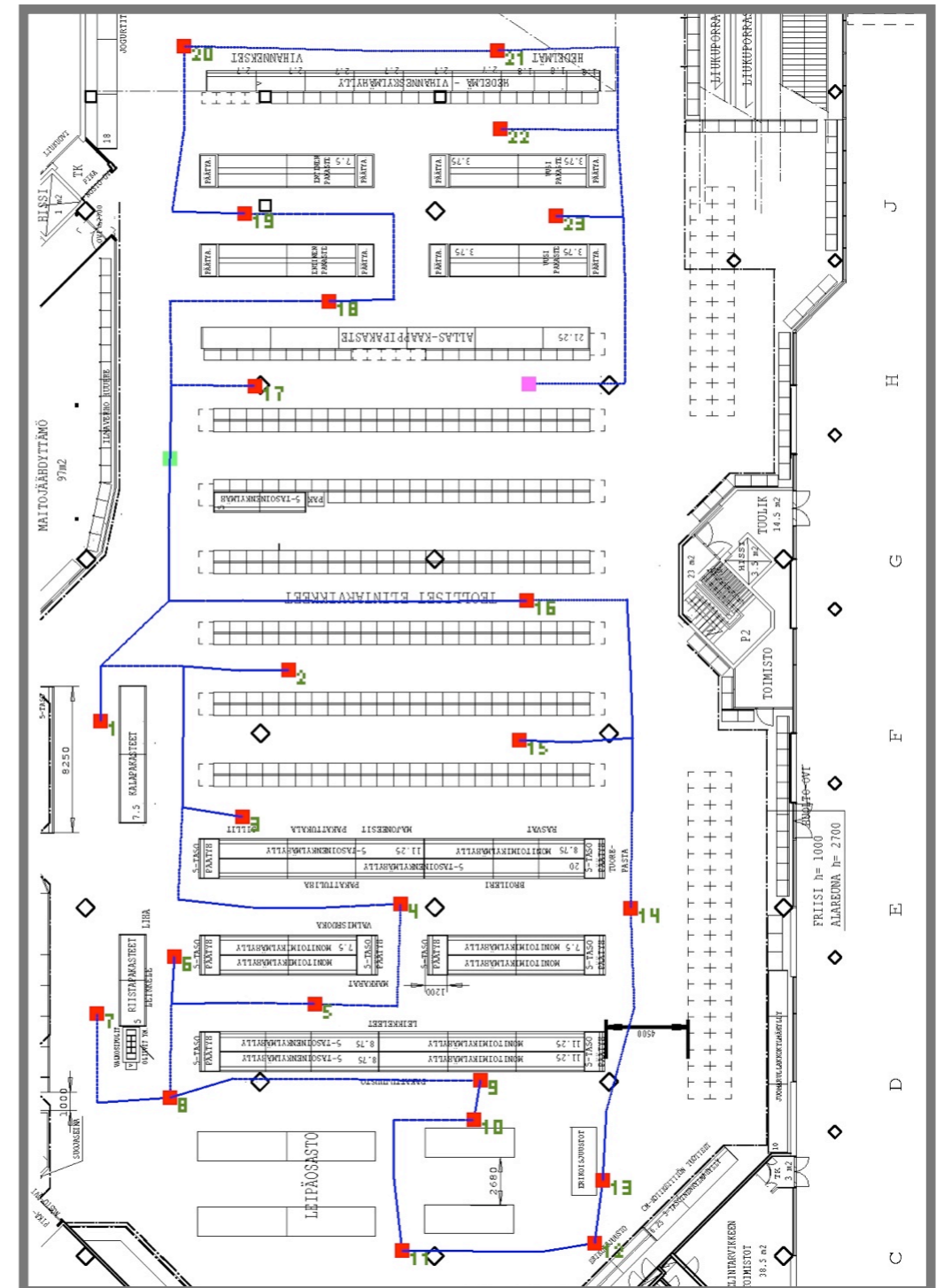
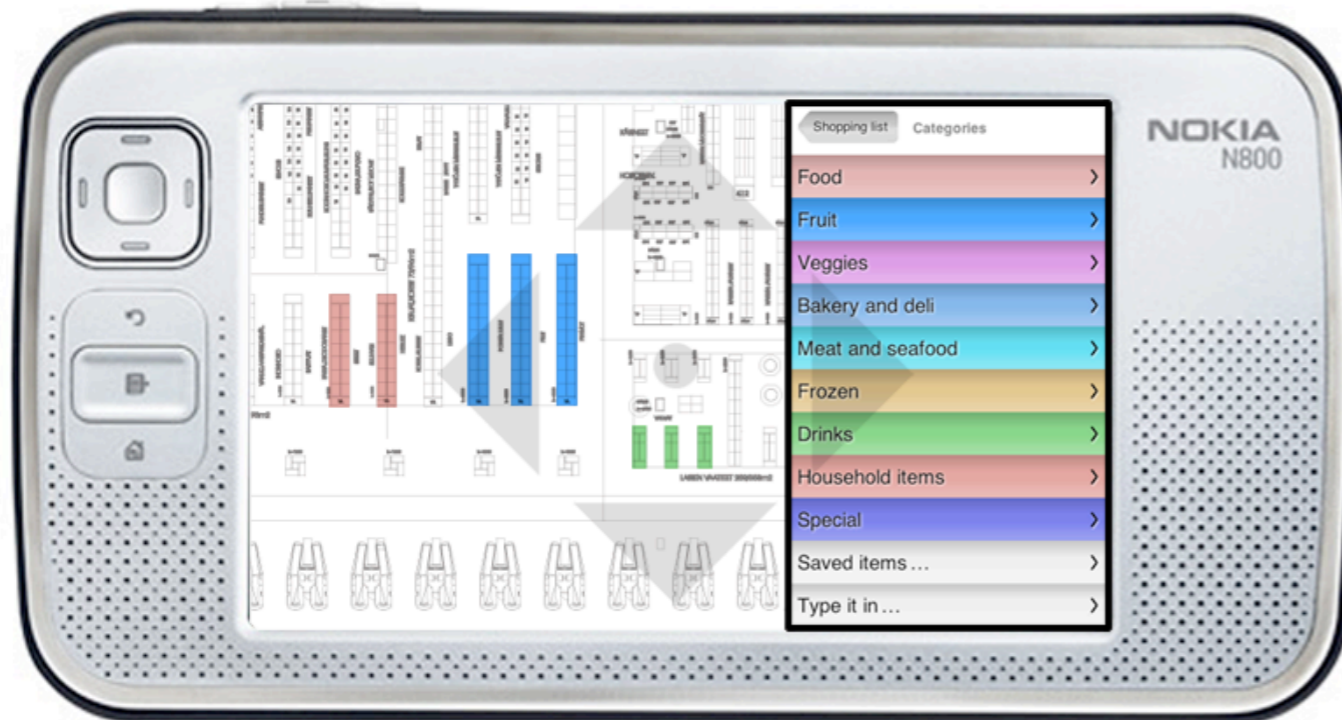
- We improve upon traditional predictive text input by using association rules to make relevant suggestions after fewer key presses
- For example, if the user's shopping list contains jäätelö (ice cream), MA\$\$IV€ might suggest “suklaakastike” (chocolate sauce) as soon as the user enters the letter “s”, because this user buys them often together
- Interface to a recipe database for easy inclusion of items



Intelligent route planning



- Use heuristic optimisation algorithms for finding a short route going via all the items in the shopping list
- Predicted items can also be used (based on user model and/or current offers available in the shop)



Context-aware navigation



Personalised and location-sensitive

- alerts
- maps
- navigation instructions
- nutritional information
- recommendations
- price information
- product comparisons

Using

- a mobile device (display, audio, vibration)
- augmented reality (public displays, visors,...)

NOKIA N95

1. Pirkka 450g

2. Felix 300g

Looking for ketchup?



Funnelry



BACKGROUND

- Many people use multiple social media services (e.g. Facebook and Flickr)
- Their friends also use multiple social media services

PROBLEM

- The social media information is overlapping
- To follow activities in many services takes time
- To upload information to several services is laborious

SOLUTION

Funnelry combines several social media services into a single, personalised and context-aware mobile web application



Funnelry



See activities on map



Locate your buddies on map



See a "trail" of activities



Thank you!

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