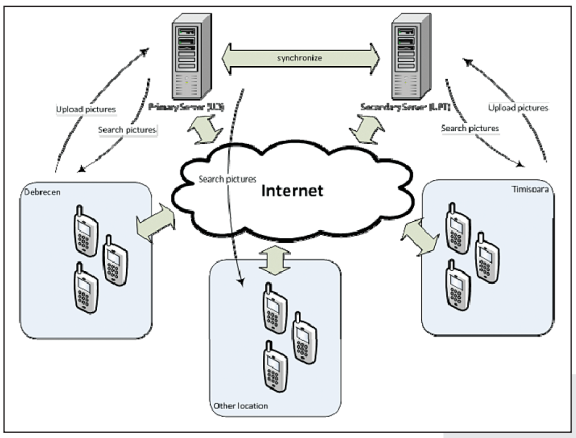
Cross border academic development of an image-based recommendation system for regional educational purposes MobileAssistant

Goal of the project: The project implementation is carried out on two main directions: (1) to strengthen the education process of both universities in the fields of image processing, mobile applications development and data mining and (2) to propose and develop an image based recommendation solution running on mobile devices for educational purposes within the border region.

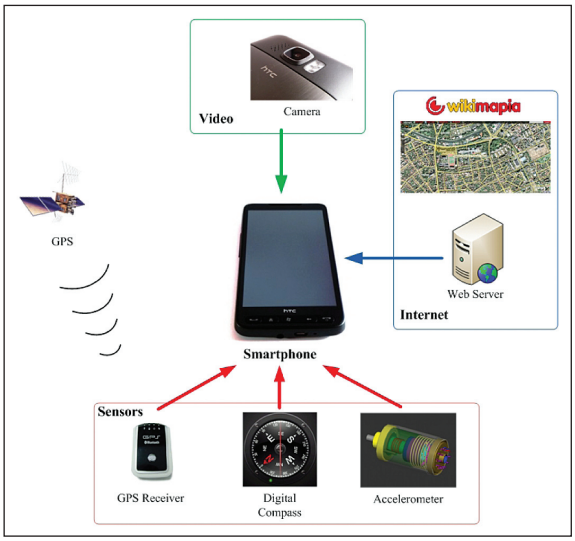
Short description of the project: The educational process is developed by an extensive exchange of know-how and by joint development of a real life mobile client-server application. The knowledge is transferred between universities and also between experts and students involved in the project development. Therefore a number of joint seminaries have been proposed and delivered to the team of students. The development process of a mobile application involved the students in lifecycle of a mobile application.



Project implemented by: Mobile Computing, Sensors Network and Embedded Systems Laboratory and Real-Time Systems, Robotics and Digital Signal Processing Laboratory

Implementation period:
01.01.2012-31.01.2013

Main activities: Development activities address three research domains: (1) image processing and image retrieval, (2) data mining algorithms applied to images and (3) mobile applications development using augmented reality and user context detection. Using the theoretical and practical knowledge transferred to the participating students, an image-based recommendation solution has been developed.



The recommendation solution is based on clientserver architecture. The client side is running on the mobile devices and the server side is deployed within the server infrastructure. Mobile client application takes the input from the users as picture, then augments the picture with relevant information for data mining process and sends this information to the server component.

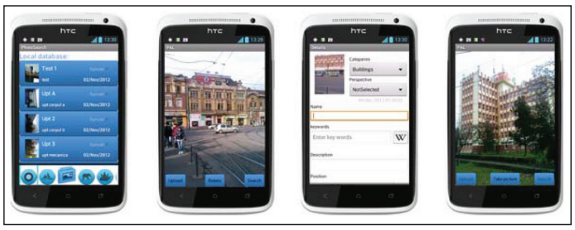
The user can add specific keywords to the taken pictures and sends them together with the other information. The server stores the received images together with their associated augmented information and applies the data mining algorithms.

"Innovation distinguishes between aleader and a follower."

Steve Jobs

When the user searches for specific keywords, the server responds with relevant information and associated images stored in the database. The retrieved information is displayed on the mobile screen and the user can select and view the requested data.

Results: This project addresses the main aspects of the smart growth strategy in Europe 2020 program: education, research/ innovation and digital society. We try to use our common research experience on mobile devices, image recognition and data mining to introduce and adapt educational process to the modern mobile digital society. We aim this targeting two directions: (1) to integrate an already existing resource – mobile devices – in the educational process; (2) to increase the attractiveness of programs of study by using this infrastructure and based on a stronger orientation to labor market needs.



Fields of interest: image processing and image retrieval, data mining algorithms applied to images and mobile applications development.

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Research centre: Research Centre for Computers and Information Technology

Applicability and transferability of the results: The seminaries developed during the project implementation take part of the curricula offer of Computer and Information Technology Department. The mobile recommendation application is available for free on Google Play market.

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