

Proposal of Scientific Project for validating Benke

Title :

Interactive building map for indoor navigation assistance

Supervisors : W. Elloumi, R. Leconge

Laboratory : PRISME, Image & Vision Team, <http://www.univ-orleans.fr/prisme/image-vision>

Internship period : From February till May 2014

Abstract :

The objective of this internship will be to develop an interactive map as a component of an indoor navigation assistance system for visual impaired people. Indoor localization estimation is based on the fusion of measurements provided by embedded sensors of a hand held Smartphone. The system assumes the availability of a map to track the user's current location with addressing environment information to compute the path to the destination. Some landmarks (such as doors, intersections, floor transitions, ramps, stairs, elevators, etc.) play an important role in the cognitive mapping of indoor spaces. These features have to be added to the original 2D scanned map of the building to inform the user of the direction to take or of the presence of potential obstacles.

References

Indoor navigation assistance with a Smartphone camera based on vanishing points, W. Elloumi & al., IPIN 2013.

Integrated online localization and navigation for people with visual impairments using Smartphone, Ilias Apostolopoulos & al., ICRA 0212.

Required skill

- C/C++ programming
- Androïd
- Image processing



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