

Indoor Positioning and Guiding for Drivers

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Abstract In this paper we present an indoor positioning and guiding system for drivers which is able to operate robustly in indoor car parks. Our proposal is able to estimate with a reasonable accuracy the position of a vehicle as well as determining the best route and providing guiding instructions (visual, textual and auditory) to the driver. To approximate the position of the vehicle it uses Bayesian estimation able to combine three sources of information: a) the inertial sensors of a mobile phone placed inside the vehicle, b) Bluetooth low energy beacons — radiofrequency fingerprinting— and c) an occupancy map. Our system was successfully tested in a real two-floor underground car park, where the system exhibit a good performance, and a robust and reliable behavior, being able to locate the vehicle and provide instructions to different drivers.

Palabras clave Guiding, indoor positioning for vehicles, inertial navigation, BLE positioning, particle filter

LIGAZÓNS

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