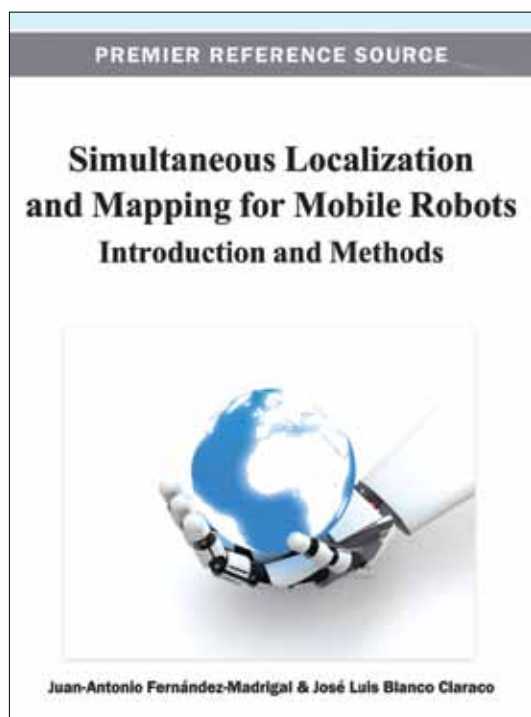


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Simultaneous Localization and Mapping for Mobile Robots: Introduction and Methods



Juan-Antonio Fernández-Madriral (Universidad de Málaga, Spain) and José Luis Blanco Claraco (Universidad de Málaga, Spain)

As mobile robots become more common in general knowledge and practices, as opposed to simply in research labs, there is an increased need for the introduction and methods to Simultaneous Localization and Mapping (SLAM) and its techniques and concepts related to robotics.

Simultaneous Localization and Mapping for Mobile Robots: Introduction and Methods investigates the complexities of the theory of probabilistic localization and mapping of mobile robots as well as providing the most current and concrete developments. This reference source aims to be useful for practitioners, graduate and postgraduate students, and active researchers alike.

Topics Covered:

- Feature Sensors
- Map Sensors
- Mobile Robot Localization
- Non-Holonomic Model
- Probabilistics
- Robotics
- Simultaneous Localization and Mapping (SLAM)

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Dr. Juan-Antonio Fernández-Madriral holds a PhD in Computer Science and is tenured Associate Professor in the University of Málaga (Spain). He has been teaching since 1998 in graduate and post-graduate courses on real-time systems, control engineering and robotics. He has supervised PhD theses on cognitive robotics and probabilistic localization and mapping for mobile robots, and a relevant number of BSc and MSc theses on very diverse subjects. His research work has been developed mainly on different aspects of the modeling of the environment for mobile robots, cognitive robotics, and robotic software development. He has three books published internationally and nearly 80 scientific papers on these and other topics. He has been involved in different roles in regional, national and European research projects, and is co-inventor of several patents. Regarding his personal interests, they currently include programming, drawing and writing, having authored five sci-fi books in Spanish and more than a hundred short stories.

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