



## 3D Robotic Mapping: The Simultaneous Localization and Mapping Problem with Six Degrees of Freedom (Springer Tracts in Advanced Robotics)

By *Andreas Nüchter*

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**3D Robotic Mapping: The Simultaneous Localization and Mapping Problem with Six Degrees of Freedom (Springer Tracts in Advanced Robotics)** By Andreas Nüchter

Focuses on acquiring spatial models of physical environments through mobile robots

The robotic mapping problem is commonly referred to as SLAM (simultaneous localization and mapping).

3D maps are necessary to avoid collisions with complex obstacles and to self-localize in six degrees of freedom ( $x$ -,  $y$ -,  $z$ -position, roll, yaw and pitch angle)

New solutions to the 6D SLAM problem for 3D laser scans are proposed and a wide variety of applications are presented

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Review

From the reviews:

“The book 3D Robotic Mapping by Andreas Nüchter represents an excellent reference for any roboticist working in the area of Simultaneous Localization and Mapping, especially those interested in 3D map building. ... The book’s intended target audience is large, ranging from undergraduate students to postdoctoral researchers keen on learning or working on this topic. ... I strongly recommend this book as a good introduction and reference material for 3D perception and mapping with mobile robots.” (Radu Bogdan Rusu, Künstliche Intelligenz, Vol. 24, June, 2010)

From the Back Cover

The monograph written by Andreas Nüchter is focused on acquiring spatial models of physical environments through mobile robots. The robotic mapping problem is commonly referred to as SLAM (simultaneous localization and mapping). 3D maps are necessary to avoid collisions with complex obstacles and to self-localize in six degrees of freedom ( $x$ -,  $y$ -,  $z$ -position, roll, yaw and pitch angle). New solutions to the 6D SLAM problem for 3D laser scans are proposed and a wide variety of applications are presented.

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