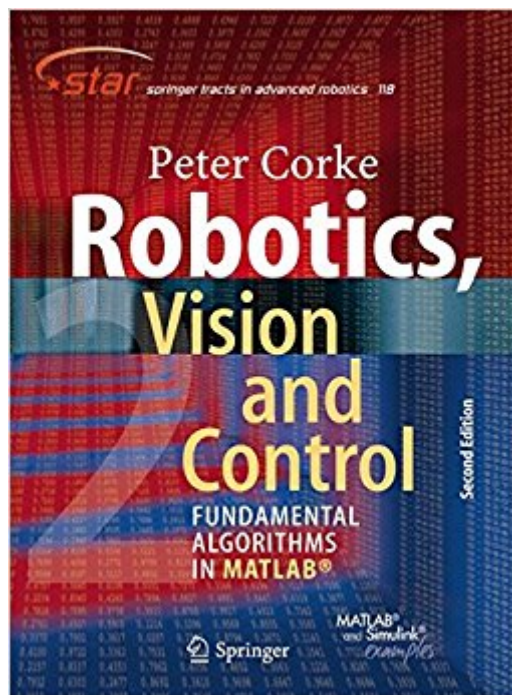The book was found

# Robotics, Vision And Control: Fundamental Algorithms In MATLAB, Second Edition (Springer Tracts In Advanced Robotics)

# Synopsis

Robotic vision, the combination of robotics and computer vision, involves the application of computer algorithms to data acquired from sensors. The research community has developed a large body of such algorithms but for a newcomer to the field this can be quite daunting. For over 20 years the author has maintained two open-source MATLABÃ Â® Toolboxes, one for robotics and one for vision. They provide implementations of many important algorithms and allow users to work with real problems, not just trivial examples. This book makes the fundamental algorithms of robotics, vision and control accessible to all. It weaves together theory, algorithms and examples in a narrative that covers robotics and computer vision separately and together. Using the latest versions of the Toolboxes the author shows how complex problems can be decomposed and solved using just a few simple lines of code. The topics covered are guided by real problems observed by the author over many years as a practitioner of both robotics and computer vision. It is written in an accessible but informative style, easy to read and absorb, and includes over 1000 MATLAB and SimulinkÃ Â® examples and over 400 figures. The book is a real walk through the fundamentals of mobile robots, arm robots. then camera models, image processing, feature extraction and multi-view geometry and finally bringing it all together with an extensive discussion of visual servo systems. This second edition is completely revised, updated and extended with coverage of Lie groups, matrix exponentials and twists; inertial navigation; differential drive robots; lattice planners; pose-graph SLAM and map making; restructured material on arm-robot kinematics and dynamics; series-elastic actuators and operational-space control; Lab color spaces; light field cameras; structured light, bundle adjustment and visual odometry; and photometric visual servoing.Ã Â Ã¢â ¬Å"An authoritative book, reaching across fields, thoughtfully conceived and brilliantly accomplished!Ã¢â ¬Â• OUSSAMA KHATIB, Stanford

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The author is the organizer of the venerable Robotics Toolbox for Matlab http://www.petercorke.com/robot with 100.000 + downloads per year (as well as the Vision Toolbox for Matlab) Peter Corke has been appointed new Editor of the IEEE Robotics and Automation

Magazine.

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