The book is intended for advanced students in physics, mathematics, computer science, electrical engineering, robotics, engine engineering and for specialists in computer vision and robotics on the techniques for the development of vision-based robot projects. It focusses on autonomous and mobile service robots for indoor work, and teaches the techniques for the development of vision-based robot projects. A basic knowledge of informatics is assumed, but the basic introduction helps to adjust the knowledge of the reader accordingly.

A practical treatment of the material enables a comprehensive understanding of how to handle specific problems, such as inhomogeneous illumination or occlusion. With this book, the reader should be able to develop object-oriented programs and show mathematical basic understanding. Such topics as image processing, navigation, camera types and camera calibration structure the described steps of developing further applications of vision-based robot projects.

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