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Time-of-Flight Cameras

Principles, Methods and Applications

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ISSN 2191-5768

ISSN 2191-5776 (electronic)

ISBN 978-1-4471-4657-5

ISBN 978-1-4471-4658-2 (eBook)

DOI 10.1007/978-1-4471-4658-2

Springer London Heidelberg New York Dordrecht

Library of Congress Control Number: 2012950373

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Printed on acid-free paper

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Preface

This book describes a variety of recent research into time-of-flight imaging. Time-of-flight cameras are used to estimate 3D scene structure directly, in a way that complements traditional multiple-view reconstruction methods. The first two chapters of the book explain the underlying measurement principle, and examine the associated sources of error and ambiguity. [Chapters 3](#) and [4](#) are concerned with the geometric calibration of time-of-flight cameras, particularly when used in combination with ordinary color cameras. The final chapter shows how to use time-of-flight data in conjunction with traditional stereo matching techniques. The five chapters, together, describe a complete depth and color 3D reconstruction pipeline. This book will be useful to new researchers in the field of depth imaging, as well as to those who are working on systems that combine color and time-of-flight cameras.

Acknowledgments

The work presented in this book has been partially supported by a co-operative research project between the 3D Mixed Reality Group at the Samsung Advanced Institute of Technology in Seoul, South Korea and the Perception group at INRIA Grenoble Rhône-Alpes in Montbonnot Saint-Martin, France.

The authors would like to thank Michel Amat for his contributions to [Chaps. 3](#) and [4](#), as well as Jan Cech and Vineet Gandhi for their contributions to [Chap. 5](#).

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