

# Preface

This book is about automotive user interfaces. In the last years the importance of user interfaces for in-vehicle usage has increased strongly. Different studies show that over 80% of today's innovations in the automotive industry are based on car electronics and its software. These innovations can be categorized into hidden technologies (e.g., ASP, ESP), comfort functions (e.g., navigation, communication, entertainment) or driver assistance (e.g., distance checking). Especially the last two categories have to be configurable by the driver and therefore require a certain amount of driver interaction. This results in a need for a modern and consistent automotive user interface which on the one hand allows the configuration of these systems and on the other hand conforms to the specialized requirements of the automotive industry. Some of these requirements are: the interaction devices have to be integrated into a limited space; the automotive user interface has to be intuitively usable and adaptable, since drivers generally do not get an extensive explanation and the automotive user interface has to be very easy to use and should distract the driver as little as possible from his main task of driving. The increased complexity of automotive user interfaces, the importance of using consumer electronic devices like smartphones in the car as well as autonomous driving has induced a lot of research at universities and industrial companies.

The specific chapters in this book cover a relatively broad spectrum of detailed research topics in the area of automotive user interfaces concerning, e.g. usability and user experience, interaction techniques and technologies, applications, etc. This book provides an outstanding overview as well as deep insights into the area of automotive user interfaces, which is an important topic in the field of human-computer interaction. Besides aiming to be a reference in its area, this book is intended as a very significant and valuable source for professional practitioners, researchers as well as senior and postgraduate computer science and engineering students.

This book could not be completed without the help of many people. We would like to thank all the authors for their contribution to the book. Finally, we would like to thank Beverley Ford and James Robinson at Springer (London, UK) for their support and assistance in publishing this book in a timely fashion.

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September 2016

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<http://www.springer.com/978-3-319-49447-0>

Automotive User Interfaces

Creating Interactive Experiences in the Car

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2017, IX, 510 p. 162 illus., 139 illus. in color., Hardcover

ISBN: 978-3-319-49447-0