

Preface

This book is the first book to describe how Autonomous Virtual Humans and Social Robots can interact with real people, be aware of these people and the environment and react to various situations. The book explains the main techniques for the tracking and the analysis of humans and their behaviour including facial expressions, body and hand gestures and sound localization. It explains how the virtual human and the social robot should react at the right time based on the perception they have from the real participants. It describes how to create socially interactive behaviour generation for virtual characters and social robots using the same modalities as human do: verbal, body gestures, facial expressions and gaze. The book also discusses how a virtual human or a social robot can replace a real human in a remote location.

The contributors of this book are international experts in the field. Several of them come from different institutes/schools in Nanyang Technological University (NTU) in Singapore: Institute for Media Innovation, School of Electrical and Electronic Engineering, and School of Art, Design and Media. Three chapters have contributors from the well-known Korea Institute of Science and Technology in Seoul. Other contributors are from France and China. In total, more than 100 researchers have contributed to this book.

This book is partly the result of two large ongoing projects developed in two main centres: the Centre of Human-centred Interaction for Coexistence in Seoul at Korea Institute of Science and Technology (KIST) and the BeingThere Center (BTC) in NTU in Singapore. The research done by the authors in the BeingThere Centre in NTU is supported by the Singapore National Research Foundation under its International Research Centre Funding Initiative and administered by the IDM Programme. The research done at the Korea Institute of Science and Technology (KIST) is supported by the Ministry of Education, Science and Technology in Korea.

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