

Preface

We are pleased to present the proceedings of the first international conference, Asia Haptics 2014, held in Tsukuba, Japan, November 18–20.

Asia Haptics is a new type of international conference for the haptics fields, featuring interactive presentations with demonstrations. We received 62 submissions, and the review process led to 58 of those being accepted for publication. With the addition of 10 late-breaking demonstrations and 3 exhibits, the conference became the place to experience 71 live demonstrations of haptics research.

While the haptics-related research field is huge, the book divides it into six parts.

Part I is composed of nine chapters, treating perception and psychophysics of haptics. They are unquestionably the basis of haptics research.

Part II comprises 12 chapters, dealing with tactile devices for skin sensation, such as vibration, pressure, and temperature, and their rendering methods.

Part III consists of 13 chapters, considering force feedback devices and rendering methods. Some of them utilized tactile-based illusions, so the distinction between tactile devices and force feedback devices is vague.

Part IV is composed of five chapters, concerned with sensors such as the pressure distribution sensor and force sensor, many of which enable novel computer–human interaction.

Part V is made up of seven chapters, going into medical applications including surgery simulation and rehabilitation.

Part VI contains 11 chapters, discussing the application of haptics to virtual reality, telepresence, and multimedia, all exploring new application areas of haptics.

This book helps not only active haptic researchers but also general readers to understand what is going on in this interdisciplinary area of science and technology. All chapters have accompanying videos available online (Springer video). Therefore, readers can easily understand the concept of the work with the supplemental videos.

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