Preface

Device Design

The WHaT: A Wireless Haptic Texture Sensor

Haptic Displays Based on Magnetorheological Fluids: Design, Realization and Psychophysical Validation

Multi-Fingered Tactile Feedback from Virtual and Remote Environments

Designing the Haptic Turntable for Musical Control

Development of a Non-Grounded Haptic Interface Using the Gyro Effect

SmartTouch--Augmentation of Skin Sensation with Electrocutaneous Display

Performance Analysis of a 2-Link Haptic Device with Electric Brakes

Device Evaluation and Performance

Spatial Low Pass Filters for Pin Actuated Tactile Displays

Motion Guidance Experiments with Scooter Cobot

Human Motor Performance While Using a Single-DOF Visual-Haptic Interface

Guideline for Designing Haptic Master Hands Based on Dynamic Multi-Fingered Manipulability

Preliminary Two Dimensional Haptic Thresholds and Task Performance Enhancements

Simulating Side Slopes on Locomotion Interfaces Using Torso Forces

Control and Modeling

Path-Following Control for Dissipative Passive Haptic Displays

Dynamic Local Models for Stable Multi-Contact Haptic Interaction with Deformable Objects

The Haptic Probe: Mechanized Haptic Exploration and Automated Modeling

Recognition of Operator Motions for Real-Time Assistance Using Virtual Fixtures

Toward Robust Passivity: A Passive Control Implementation Structure for Mechanical Teleoperators

The Effect of Sensor/Actuator Asymmetries in Haptic Interfaces

Psychophysics

Relative Performance Using Haptic and/or Touch-Produced Auditory Cues in a Remote Absolute Texture Identification Task

Feedback Distortion for Rehabilitation: Gauging Perceived Physical Effort

Validity of Haptic Cues and Its Effect on Priming Visual Spatial Attention

Material Discrimination and Thermal Perception

How Well Can We Encode Spatial Layout from Sparse Kinesthetic Contact?

The Role of Multisensory Feedback in Haptic Surface Perception

Rendering

An Experimental Study of Perceived Instability During Haptic Texture Rendering: Effects of Collision Detection Algorithm

Levels of Detail in Reducing Cost of Haptic Rendering: A Preliminary User Study

Haptic Editing of Decoration and Material Properties
An Integral Equation Based Multiresolution Modeling Scheme for Multimodal Medical Simulations p. 221

Six Degree-of-Freedom Haptic Rendering of Complex Polygonal Models p. 229

Fuzzy Vector Median Based Surface Smoothing in a Haptic Environment p. 236

Applications

Haptic Effects for Virtual Reality-Based Post-Stroke Rehabilitation p. 247

Haptic Aided Design: A Case Study p. 254

Electro-Rheological Fluidic Actuators for Haptic Vehicular Instrument Controls p. 262

Haptic Task Constraints for 3D Interaction p. 270

Implementation of a Haptic Interface for a Virtual Reality Simulator for Flexible Endoscopy p. 278

Performance and Co-Presence in Heterogeneous Haptic Collaboration p. 285

Poster and Demonstration Papers

Sensors Assisted Telemanipulation for Maximizing Manipulation Capabilities of Persons with Disabilities p. 295

The Role of Torque in Haptic Perception of Object Location in Virtual Environments p. 302

Design of a Uniactuated Bimanual Haptic Interface p. 310

Web-Based Haptic Applications for Blind People to Create Virtual Graphs p. 318

Real-Time Rigid Body Simulation Based on Volumetric Penalty Method p. 326

An Actuator for the Tactile Vest--A Torso-Based Haptic Device p. 333

A Framework for the Haptic Rendering of the Human Hand p. 340

Passive and Active Assistance for Human Performance of a Simulated Underactuated Dynamic Task p. 348

The Hapticon Editor: A Tool in Support of Haptic Communication Research p. 356

Role of Haptics in Teaching Structural Molecular Biology p. 363

Omni-Directional Treadmill System p. 367

Design and Analysis of a Novel Virtual Walking Machine p. 374

Transparency and Stability Analysis of a Surgical Teleoperator System p. 382

A Haptic Based Virtual Grinding Tool p. 390

Controller Design for a Wearable, Near-Field Haptic Display p. 397

Activation Cues and Force Scaling Methods for Virtual Fixtures p. 404

Haptic Interface for Hands-On Instruction in System Dynamics and Embedded Control p. 410

Haptic Feedback Using Local Models of Interaction p. 416

Design of Data Glove and Arm Type Haptic Interface p. 422

Simplified Authoring of 3D Haptic Content for the World Wide Web p. 428

Observations on and Modifications to the Rutgers Master to Support a Mixture of Passive Haptics and Active Haptic Feedback p. 430

Author Index p. 439

Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.