

GENERAL PROGRAM - 2010 Haptics Symposium

(Tentative version as of 02/15/2010)

Day 1 - WEDNESDAY 24-Mar-2010

19:00 21:00 **WELCOME RECEPTION** Sponsored by Nokia
Eden Vale Foyer

Day 2 - THURSDAY 25-Mar-2010

07:30-08:30 **BREAKFAST**
Eden Vale Foyer

08:30-10:10 **Papers Session 1 (Technology): Tactile and Fingertip Systems**
Eden Vale A and B

ID #	Oral presentation time	Oral presentation duration	Title and authors
212	08:30 - 08:45	15 min	<i>A New Fabric-Based Softness Display</i> Matteo Bianchi, Alessandro Serio, Enzo Pasquale Scilingo, Antonio Bicchi
135	08:45 - 09:00	15 min	<i>3D Force Prediction Using Fingernail Imaging with Automated Calibration</i> Thomas Grieve, Lucas Lincoln, Yu Sun, John M. Hollerbach, Stephen A. Mascaró
115	09:00 - 09:15	15 min	<i>Design of Electrotactile Stimulus to Represent Distribution of Force Vectors</i> Katsunari Sato, Susumu Tachi
246	09:15 - 09:25	10 min	<i>Design and Development of a Novel Portable Haptic Interface for the Fingertip</i> Massimiliano Solazzi, Antonio Frisoli, Massimo Bergamasco
241	09:25 - 09:40	15 min	<i>Design of a Vibrotactile Display via a Rigid Surface</i> Yon Visell, Jeremy R. Cooperstock
139	09:40 - 09:55	15 min	<i>High Frequency Acceleration Feedback Significantly Increases the Realism of Haptically Rendered Textured Surfaces</i> William McMahan, Joseph M. Romano, Amal M. Abdul Rahuman, Katherine J. Kuchenbecker
228	09:55 - 10:10	15 min	<i>Emulating Human Attention-Getting Practices with Wearable Haptics</i> Matthew A. Baumann, Karon E. MacLean, Thomas W. Hazelton, Ashley McKay

10:10-10:45 **Poster/Demo Teaser 1**
Eden Vale A and B

Each poster/demo is assigned a 45-second teaser slot.

ID #	Paper or Extended Abstract	Title and authors
114	Paper	<i>Using Force Sensors and Neural Models to Encode Tactile Stimuli as Spike-based Responses</i> Elmer Kim, Gregory Gerling, Scott Wellnitz, Ellen Lumpkin
117	Paper	<i>Discrimination of Consonant Articulation Location by Tactile Stimulation of the Forearm</i> Ali Israr, Elaine Wong, Marcia O'Malley
123	Paper	<i>Characterization and Simulation of Tactile Sensors</i> Zachary Pezzementi, Erica Jantho, Lucas Estrade, Gregory Hager
125	Extended Abstract	<i>Haptic Illusion of Elasticity by Tactile Suppression during Motor Activity</i> Taku Hachisu, Sayaka Oshima, Yuki Hashimoto, Hiroyuki Kajimoto
Demo 1	Extended Abstract (125)	<i>Haptic Illusion of Elasticity by Tactile Suppression during Motor Activity</i> Taku Hachisu, Sayaka Oshima, Yuki Hashimoto (University of Electro-Communications), and Hiroyuki Kajimoto (University of Electro-Communications and Japan Science and Technology Agency (JST))
152	Extended Abstract	<i>Optimizing Populations of Tactile Sensors for Sphere Discrimination</i> Isabelle Rivest, Gregory Gerling
153	Extended Abstract	<i>Haptic Figure-Ground Differentiation via a Haptic Glance</i> Dianne Pawluk, Ryo Kitada, Aneta Abramowicz, Cheryl Hamilton, Susan Lederman
162	Paper	<i>Dynamic Switching Control of Haptic Transmission Direction in Remote Control System</i> Tatsuya Watanabe, Yutaka Ishibashi, Norishige Fukushima, Shinji Sugawara
164	Extended Abstract	<i>Virtual Object Manipulation System with Substitutive Display of Tangential Force and Slip by Control of Vibrotactile Phantom Sensation</i> Tatsuya Ooka, Kinya Fujita
166	Paper	<i>Comparison of Three Designs for Haptic Button Edges on Touch Screens</i> Toni Pakkanen, Roope Raisamo, Jukka Raisamo, Katri Salminen, Veikko Surakka
174	Paper	<i>A Finger Attachment to Generate Tactile Feedback and Make 3D Gesture Detectable by Touch Panel Sensor</i> Itsuo Kumazawa
177	Paper	<i>An Initial Study of Visio-haptic Simulation of Point-charge Interactions</i> Jaeyoung Park, Kwangtaek Kim, Hong Z. Tan, Ron Reifenberger, Gary Bertoline, Tallulah Hoberman, Deborah Bennett

178	Paper	<i>Interaction Control for a Brake Actuated Manipulator</i> Brian Dellon, Yoky Matsuoka
183	Paper	<i>Haptic Interaction with Volumetric Datasets Using Surface-based Haptic Libraries</i> Silvio Rizzi, Cristian Luciano, Pat Banerjee
186	Paper	<i>Design, Fabrication, and Testing of a Piezo-Resistive Sensor for Use in Minimally Invasive Surgery</i> Masoud Kalantari, Mohammadreza Ramezanifard, Roozbeh Ahmadi, Javad Dargahi, Jozsef Kovacs
189	Paper	<i>Simulation and Experimental Study of Mobile Robot Haptic Teleoperation with Adaptive Feedback Gain</i> Ildar Farkhatdinov, Jee-Hwan Ryu
191	Extended Abstract	<i>Simplified Design of Haptic Display by Extending One-point Kinesthetic Feedback to Multipoint Tactile Feedback</i> Kouta Minamizawa, Domenico Prattichizzo, Susumu Tachi
196	Extended Abstract	<i>Initial Study for Creating Linearly Moving Vibrotactile Sensation on Mobile Device</i> Jongman Seo, Seungmoon Choi
Demo 2	Extended Abstract (196)	<i>Linearly Moving Vibrotactile Sensation on Handheld Mobile Device</i> Jongman Seo and Seungmoon Choi (Pohang University of Science and Technology)
204	Paper	<i>New Experimental Method based Biological Soft Tissue Modeling</i> Bummo Ahn, Jung Kim
208	Paper	<i>Physically-Based Analytical Modeling of Deformable Haptic Environments</i> Kevin Walker, David Wang
213	Extended Abstract	<i>Co-presentation of Force Cues for Skill Transfer via Shared-control Systems</i> Dane Powell, Marcia O'Malley
216	Paper	<i>HITPROTO: a Tool for the Rapid Prototyping of Haptic Interactions for Haptic Data Visualization</i> Sabrina A. Paneels, Jonathan C. Roberts, Peter J. Rodgers
217	Paper	<i>Haptic Guides in Cooperative Virtual Environments: Design and Human Performance Evaluation</i> Sehat Ullah, Paul Richard, Samir Otmane, Mickael Naud, Malik Mallem
219	Extended Abstract	<i>In-Haptics: Interactive Navigation using Haptics</i> Richard Walker, Sean Andersson, Calin Belta, Pierre Dupont
220	Extended Abstract	<i>The QuickHaptics microAPI: Enabling Haptic Mashups</i> David Chen, Venkat Gourishankar, Curt Rawley, Georges Grinstein

222	Paper	<i>Stiffness Modulation for Haptic Augmented Reality: Extension to 3D Interaction</i> Seokhee Jeon, Seungmoon Choi
Demo 3	Paper (222)	<i>Stiffness Modulation for Haptic Augmented Reality: Extension to 3D Interaction</i> Seokhee Jeon and Seungmoon Choi (Pohang University of Science and Technology)
223	Paper	<i>Design and Evaluation of a Vibrotactile Seat to Improve Situation Awareness while Driving</i> Kamil Wasilewski, John Morrell
Demo 4	Paper (223)	<i>A Vibrotactile Seat and Driving Simulator for Improved Spatial Awareness</i> John Morrell, Kamil Wasilewski, and Hari Vasudevan (Yale University)
Demo 5	Paper (228)	<i>Expressive, Wearable Haptic Displays</i> Matthew Pan, Matthew A. Baumann, Thomas W. Hazelton, Karon E. MacLean, and Elizabeth A. Croft (University of British Columbia)
Demo 6		<i>Tactile Gaming Vest (TGV)</i> Saurabh Palan, Ruoyao Wang, Nathaniel Naukam, and Katherine J. Kuchenbecker (University of Pennsylvania)
Demo 7	Paper (147)	<i>A Vibrotactile Feedback Approach to Posture Guidance</i> Ying [Jean] Zheng and John B. Morrell (Yale University)
Demo 8	Paper (241)	<i>Haptic Display via a Vibrating, Rigid Surface</i> Yon Visell, Guillaume Millet, and Jeremy Cooperstock (McGill University)
Demo 9		<i>The Haptic Board</i> Zhihao Jiang, Mohit Bhoite, and Katherine J. Kuchenbecker (University of Pennsylvania)
Demo 10		<i>Dial-based Haptic Interface</i> Laehyun Kim, Wanjo Park, Hyunchul Cho, and Sehyung Park (Korea Institute of Science and Technology)
Demo 11		<i>MasterFinger-2: Multifinger Haptic Device for Virtual Object Manipulation</i> Pablo Cerrada, Manuel Ferre, Rafael Aracil, Jorge Barrio, and Pablo García-Robledo (Univ. Politécnica de Madrid)
Demo 12	Paper (185)	<i>Haptic Negotiation and Role Exchange with the Haptic Board Game</i> S. Ozgur Oguz, Ayse Kucukyilmaz, Tevfik Metin Sezgin, and Cagatay Basdogan (Koc University)
Demo 13		<i>GPU-Based Haptic Rendering of 3D Smoke</i> Meng Yang (Microsoft Corporation), Jingwan Lu (Hong Kong University of Science and Technology), Alla Safonova (University of Pennsylvania), and Katherine J. Kuchenbecker (University of Pennsylvania)

Demo 14		<i>Interactive Simulation of Needle Insertion Using a Magnetic Levitation Haptic Interface</i> Bing Wu (Carnegie Mellon University)
Demo 15		<i>Simulating Dental Procedures with a Magnetic Levitation Haptic Interface</i> Yu Ge (Beihang University and Carnegie Mellon University)
Demo 16		<i>Virtual Reality Dental Simulator</i> DangXiao Wang, YuRu Zhang, WanLin Zhou, Ge Yu, Jun Wu, and Hui Zhao (BeiHang University)
Demo 17		<i>Haptic Bite Articulation</i> Venkat Gourishankar and Curt Rawley (SensAble Technologies)
Demo 18		<i>Stiffness Shifting: Improving the Perceived Hardness of a Virtual Surface</i> Gabjong Han, Seokhee Jeon, and Seungmoon Choi (Pohang University of Science and Technology (POSTECH))
Demo 19		<i>Exchanging Tracking for Accurate Force Display in Multiple Degree-of-freedom Teleoperation</i> Paul Griffiths and Allison Okamura (Johns Hopkins University)
Demo 20		<i>Force Feedback Teleoperation for EOD Manipulation Tasks</i> Martin Buehler, Wes Huang, Mark Claffee, Emilie Phillips (iRobot), Walt Aviles, and Jonathan Miller (Novint Technologies)

10:45-12:15 **Poster/Demo Session 1 (BREAK)**

Eden Vale Foyer, Eden Vale C, and Emerson

Posters and demonstrations will be up during the whole conference.

12:15-13:45 **LUNCH**

13:45-15:20 **Papers Session 2 (Human): Human Haptic Perception and Performance**

Eden Vale A and B

ID #	Oral presentation time	Oral presentation duration	Title and authors
198	13:45 - 14:00	15 min	<i>Perceptual Space and Adjective Rating of Sinusoidal Vibrations Perceived via Mobile Device</i> Inwook Hwang, Seungmoon Choi
165	14:00 - 14:15	15 min	<i>Haptic Exploration of Spheres: Techniques and Initial Experiment</i> Blake Hannaford, Jesse Doshier, Sugandhan Venkatachalam
276	14:15 - 14:25	10 min	<i>Psychophysical Detection of Inclusions with the Bare Finger amidst Softness Differentials</i> Leigh Baumgart, Gregory Gerling, Ellen Bass

170	14:25 - 14:40	15 min	<i>Human vs. Robotic Tactile Sensing: Detecting Lumps in Soft Tissue</i> James Gwilliam, Zachary Pezzementi, Erica Jantho, Allison Okamura, Steven Hsiao
176	14:40 - 14:55	15 min	<i>Redundant Coding of Simulated Tactile Key Clicks with Audio Signals</i> Hsiangyu Chen, Jaeyoung Park, Steve Dai, Hong Tan
202	14:55 - 15:10	15 min	<i>Perceptual Representations of Parametrically-Defined and Natural Objects Comparing Vision and Haptics</i> Nina Gaisser, Christian Wallraven
138	15:10 - 15:20	10 min	<i>Effects of Kinesthetic Information on Memory Chunking in 2D Sequential Selection Task</i> Gabjong Han, Jaebong Lee, In Lee, Seokhee Jeon, Seungmoon Choi

15:20-15:50 **Poster/Demo Teaser 2**
Eden Vale A and B

Each poster/demo is assigned a 45-second teaser slot.

ID #	Paper or Extended Abstract	Title and authors
227	Paper	<i>Exploring the Underlying Structure of Haptic-based Handwritten Signatures using Visual Data Mining Techniques</i> Nizar Sakr, Fawaz A. Alsulaiman, Julio J. ValdÈs, Abdulmotaleb El Saddik, Nicolas D. Georganas
229	Extended Abstract	<i>Towards Real-Time Haptic Exploration using a Mobile Robot as Mediator</i> Chung Hyuk Park, Ayanna M. Howard
232	Paper	<i>Haptic Characteristics of some Activities of Daily Living</i> Brittany Redmond, Rachel Aina, Tejaswi Gorti, Blake Hannaford
233	Paper	<i>Design of a Haptic System for Hand Rehabilitation Integrating an Interactive Game with an Advanced Robotic Device</i> Mark Sivak, Ozer Unluhisarcikli, Brian Weinberg, Paolo Bonato, Constantinos Mavroidis
Demo 21	Paper (233)	<i>A Haptic System for Hand Rehabilitation Integrating an Interactive Game with a Robotic Device</i> Mark Sivak, Ozer Unluhisarcikli, Brian Weinberg (Northeastern University), Paolo Bonato (Harvard Medical School and Spaulding Rehabilitation Hospital), and Constantinos Mavroidis (Northeastern University)
236	Paper	<i>Design of a Haptic Device for MRI-Guided Prostate Needle Brachytherapy</i> Hao Su, Weijian Shang, Gregory Cole, Kevin Harrington, Gregory Fischer

237	Paper	<i>Stability Analysis of Haptic Interfaces for Different Types of Sampled Signals and Virtual Environment Implementations</i> Amir Haddadi, Keyvan Hashtrudi-Zaad
238	Paper	<i>Active Handrest for Precision Manipulation and Ergonomic Support</i> Mark Fehlberg, Brian Gleeson, Levi Leishman, William Provancher
245	Paper	<i>Skin Nonlinearities and their Effect on User Perception for Rotational Skin Stretch</i> Pete Shull, Karlin Bark, Mark Cutkosky
247	Paper	<i>Cooperative Teleoperation Control with Projective Force Mappings</i> Pawel Malysz, Shahin Sirouspour
251	Extended Abstract	<i>Design of a Haptic Simulator for Osteosynthesis Screw Insertion</i> Ann Majewicz, Jason Glasser, Rosemary Bauer, Stephen Belkoff, Simon Mears, Allison Okamura
Demo 22	Extended Abstract (251)	<i>Haptic Simulator for Osteosynthesis Screw Insertion</i> Ann Majewicz, Jason Glasser, Rosemary Bauer (Johns Hopkins University), Stephen Belkoff, Simon Mears (Johns Hopkins Bayview Medical Center), and Allison Okamura (Johns Hopkins University)
256	Paper	<i>Finding a Feature on a 3D Object through Single-Digit Haptic Exploration</i> Kristina Huynh, Cara E. Stepp, Lee W. White, J. Edward Colgate, Yoky Matsuoka
259	Extended Abstract	<i>Surface Waves and Spatial Localization in Vibrotactile Displays</i> Lynette Jones, David Held, Ian Hunter
262	Paper	<i>A Two-grid Iterative Approach for Real-time Haptics Mediated Interactive Simulation of Deformable Objects</i> Venkata Arikatla, Suvranu De
264	Extended Abstract	<i>Dilatant Fluid Based Tactile Display -Basic concept-</i> Satoshi Saga, Koichiro Deguchi
265	Paper	<i>Perceptual Thresholds for Single vs. Multi-Finger Haptic Interaction</i> H. Hawkeye King, Regina Donlin, Blake Hannaford
267	Paper	<i>Northeastern University Virtual Ankle and Balance Trainer</i> Ye Ding, Maureen Holden, Mark Sivak, Brian Weinberg, Constantinos Mavroidis
268	Extended Abstract	<i>Towards Physics-based Interactive Simulation of Electrocautery Procedures using PhysX</i> Zhonghua Lu, Ganesh Sankaranarayanan, Dhannanjay Deo, Dingfang Chen, Suvranu De
Demo 23	Extended Abstract (268)	<i>Laparoscopic Adjustable Gastric Banding Simulator</i> Ganesh Sankaranarayanan (Rensselaer Polytechnic Institute), Tansel Halic (Rensselaer Polytechnic Institute), Zhonghua Lu (Rensselaer Polytechnic

		Institute and Wuhan University of Technology), James D. Adair (Beth Israel Deaconess Medical Center and Harvard Medical School), Daniel B. Jones (Beth Israel Deaconess Medical Center and Harvard Medical School), and Suvranu De (Rensselaer Polytechnic Institute)
270	Extended Abstract	<i>Tactile Mouse Using Friction Control</i> Masaya Takasaki, Hiroyuki Kotani, Ryo Tamon, Takeshi Mizuno
271	Extended Abstract	<i>Friction Measurements on a Large Area TPaD</i> Nicholas Marchuk, J. Edward Colgate, Michael Peshkin
Demo 24	Extended Abstract (271)	<i>The Large Area TPaD</i> Nicholas Marchuk, Dan Johnson, John Ware, J. Edward Colgate, and Michael A. Peshkin (Northwestern University)
272	Extended Abstract	<i>A Basic Study on Tactile Displays Using Velvet Hand Illusion</i> Yuji Kawabe, Abdullah Chami, Masahiro Ohka, Tetsu Miyaoka
277	Paper	<i>Establishing Multimodal Telepresence Sessions using the Session Initiation Protocol (SIP) and Advanced Haptic Codecs</i> H Hawkeye King, Julius Kammerl, Blake Hannaford, Eckehard Steinbach
278	Paper	<i>Spatially Distributed Tactile Feedback for Kinesthetic Motion Guidance</i> Pulkit Kapur, Mallory Jensen, Laurel J. Buxbaum, Steven A. Jax, Katherine J. Kuchenbecker
279	Paper	<i>Modeling Pneumatic Bubble Displacements with Membrane Theory</i> Louis Kratchman, Brent Gillespie, Jian Wen
Demo 25		<i>T-Pod: A Novel Multi-modal Handheld Device with Fingertip Shear Feedback</i> William Provancher, Charles Stewart, Markus Montandon, and Aaron Greer (University of Utah)
Demo 26	Paper (212)	<i>A New Fabric-based Softness Display</i> Alessandro Serio, Matteo Bianchi, Enzo Pasquale Scilingo, and Antonio Bicchi (University of Pisa)
Demo 27		<i>A Mutual Tactile Communication Device by Controlling Air Pressure</i> Satuki Nakata, Yuki Hashimoto, and Hiroyuki Kajimoto (University of Electro-Communications)
Demo 28		<i>Realistic Haptic Contacts and Textures for Tablet Computing</i> Joseph M. Romano and Katherine J. Kuchenbecker (University of Pennsylvania)
Demo 29		<i>Novel 4-State Programmable Brakes in a 2 DOF Passive Haptic Display</i> Yaroslav Tenzer, Brian L. Davies, and Ferdinando Rodriguez y Baena (Imperial College London)
Demo 30		<i>Low-cost Microcontroller Solutions for Haptic Device Motor Control</i> Ivan Figueroa, Alejandro Aguilar, and Joel Huegel (ITESM-Campus Guadalajara)
Demo 31		<i>Angle Tracking and Location At-home System for Bi-manual Rehabilitation (ATLAS-BR) Smart Glove</i>

Demo 31		<i>Angle Tracking and Location At-home System for Bi-manual Rehabilitation (ATLAS-BR) Smart Glove</i> Mark Sivak, Avi Bajpai, Drew Lentz, Caitlyn Bintz, Andrew Clark, Jason Chrisos, Maureen K. Holden, and Constantinos Mavroidis (Northeastern University)
Demo 32		<i>A Novel Haptic-based Interface for Training Interventional Radiology Procedures</i> Chris Hughes and Nigel John (Bangor University)
Demo 33	Paper (255)	<i>Fiber-Optic Intubation Simulator with Haptic Feedback</i> Ankur Baheti, Yuri Millo (Simulation and Training Environment Laboratory), and Jaydev P. Desai (University of Maryland, College Park)
Demo 34		<i>High-Frequency Tactile Feedback for the da Vinci Surgical System</i>

15:50-17:20 **Poster/Demo Session 2 (BREAK)**

Eden Vale Foyer, Eden Vale C, and Emerson

Posters and demonstrations will be up during the whole conference.

18:30-21:30 **BANQUET Sponsored by SensAble Technologies**

Museum of Science (buses leave starting 18:00)

Day 3 - FRIDAY

26-Mar-2010

07:30-08:30 **BREAKFAST**

Eden Vale Foyer

08:30-09:50 **Papers Session 3 (Technology): Kinesthetic Haptic Systems**

Eden Vale A and B

ID #	Oral presentation time	Oral presentation duration	Title and authors
215	08:30 - 08:40	10 min	<i>Enhancing Rate-hardness of Energy-bounding Algorithm by Considering Coulomb Friction of Haptic Interface</i> Jaeha Kim, Jong-Phil Kim, Changhoon Seo, Jeha Ryu
179	08:40 - 08:55	15 min	<i>Unconditional Stability Analysis of Dual-user Teleoperation Systems</i> Behzad Khademian, Keyvan Hashtrudi-Zaad
210	08:55 - 09:10	15 min	<i>An Iterative Approach to Optimizing Multi-user Networked Haptic Simulations</i> Sina Niakosari, Shahin Sirouspour
145	09:10 - 09:25	15 min	<i>Measuring and Incorporating Slip in Data-Driven Haptic Rendering</i> Raphael Hoever, Matthias Harders

172	09:25 - 09:40	15 min	<i>Force and Contact Location Shading Thresholds for Smoothly Rendering Polygonal Models</i> Andrew Doxon, David Johnson, Hong Tan, William Provancher
171	09:40 - 09:50	10 min	<i>Expressive Haptic Rendering with Cartoon-Inspired Effects</i> Brian Gleeson, David Johnson

09:50-11:05 **Poster/Demo Session 3 (BREAK)**

Eden Vale Foyer, Eden Vale C, and Emerson

Posters and demonstrations will be up during the whole conference.

11:05-12:30 **Papers Session 4 (Applications): Haptics in Guidance**

Eden Vale B

ID #	Oral presentation time	Oral presentation duration	Title and authors
107	11:05 - 11:20	15 min	<i>Effects of Haptic Guidance and Disturbance on Motor Learning: Potential Advantage of Haptic Disturbance</i> Jaebong Lee, Seungmoon Choi
190	11:20 - 11:35	15 min	<i>Progressive Haptic and Visual Guidance for Training in a Virtual Dynamic Task</i> Joel Huegel, Marcia O'Malley
147	11:35 - 11:50	15 min	<i>A Vibrotactile Feedback Approach to Posture Guidance</i> Ying Zheng, John Morrell
230	11:50 - 12:00	10 min	<i>Torso-Based Tactile Feedback System for Patients with Balance Disorders</i> Steven Wu, Richard Fan, Christopher Wottawa, Warren Grundfest, Martin Culjat
175	12:00 - 12:15	15 min	<i>BlindAid: Virtual Environment System for Self-Reliant Trip Planning and Orientation and Mobility Training</i> David Schloerb, Orly Lahav, Joseph Desloge, Mandayam Srinivasan
185	12:15 - 12:30	15 min	<i>Haptic Negotiation and Role Exchange for Collaboration in Virtual Environments</i> S. Ozgur Oguz, Ayse Kucukyilmaz, Tefvik Metin Sezgin, Cagatay Basdogan

12:30-14:00 **LUNCH**

14:00-15:00 **Special Session – “The Future of Interaction in Mobile Devices”**

Dr. Leo Kärkkäinen, Distinguished Scientist, Nokia

Eden Vale A and B

15:00-16:30 **Papers Session 5 (Applications): Haptics in Medical and Rehabilitation**

Applications

Eden Vale A and B

ID #	Oral presentation time	Oral presentation duration	Title and authors
255	15:00 - 15:15	15 min	<i>Fiber-Optic Intubation Simulator with Force Feedback</i> Ankur Baheti, Yuri Millo, Jaydev Desai
252	15:15 - 15:30	15 min	<i>Haptic Noise Cancellation: Restoring Force Perception in Robotically-Assisted Beating Heart Surgery</i> Shelten Yuen, Karl-Alexander Dubec, Robert Howe
118	15:30 - 15:45	15 min	<i>Gait Rehabilitation System for Stair Climbing and Descending</i> Hiroaki Yano, Shintaro Tamefusa, Naoki Tanaka, Hideyuki Saitou, Hiroo Iwata
225	15:45 - 16:00	15 min	<i>Gait Rehabilitation Therapy Using Robot Generated Force Fields Applied at the Pelvis</i> Maciek Pietrusinski, Iahn Cajigas, Yuhannes Mizikacioglu, Paolo Bonato, Constantinos Mavroidis
254	16:00 - 16:15	15 min	<i>Haptic Gait Retraining for Knee Osteoarthritis Treatment</i> Pete Shull, Kristen Lurie, Mihye Shin, Thor Besier, Mark Cutkosky
257	16:15 - 16:30	15 min	<i>ReFlex, a Haptic Wrist Interface for Motor Learning and Rehabilitation</i> Dominique Chapuis, Remco Bethem de Grave, Oliver Lamercy, Roger Gassert

16:30-17:00 **Award Ceremony and Closing**

Eden Vale A and B