

**2012 7th ACM/IEEE  
International Conference on  
Human-Robot Interaction**

**(HRI 2012)**

**Boston, Massachusetts, USA  
5-8 March 2012**



**IEEE Catalog Number: CFP12HRI-PRT  
ISBN: 978-1-4503-1063-5**

# HRI 2012 Table of Contents

- ix HRI 2012 Conference Organization  
xiv HRI 2012 Sponsors & Supporters

## Session 1: Robot Manipulation and Programming

Session Chair: Greg Trafton, *Naval Research Laboratory, USA*

- 1 Strategies for Human-in-the-Loop Robotic Grasping**  
Adam Leeper, Kaijen Hsiao, Matei Ciocarlie, Leila Takayama, *Willow Garage, Inc.*  
David Gossow, *Technische Universität München*
- 9 Grip Forces and Load Forces in Handovers: Implications for Designing Human-Robot Handover Controllers**  
Wesley P. Chan, Chris A. C. Parker, H. F. Machiel Van der Loos, Elizabeth A. Croft, *University of British Columbia*
- 17 Designing Robot Learners that Ask Good Questions**  
Maya Cakmak, Andrea L. Thomaz, *Georgia Institute of Technology*
- 25 Robot Behavior Toolkit: Generating Effective Social Behaviors for Robots**  
Chien-Ming Huang, Bilge Mutlu, *University of Wisconsin-Madison*

## Session 2: Attitudes and Responses to Social Robots

Session Chair: Leila Takayama, *Willow Garage*

- 33 Do People Hold a Humanoid Robot Morally Accountable for the Harm It Causes?**  
 Peter H. Kahn, Jr., *University of Washington*  
 Takayuki Kanda, *ATR*  
Hiroshi Ishiguro, *ATR & Osaka University*  
Brian T. Gill, *Seattle Pacific University*  
Jolina H. Ruckert, Solace Shen, Heather E. Gary, Aimee L. Reichert, *University of Washington*  
Nathan G. Freier, *Microsoft Redmond*  
Rachel L. Severson, *Western Washington University*
- 41 Social Facilitation with Social Robots?**  
Nina Riether, Frank Hegel, Britta Wrede, Gernot Horstmann, *Bielefeld University*
- 49 New Measurement of Psychological Safety for Humanoid**  
Hiroko Kamide, Yasushi Mae, *Osaka University*  
Koji Kawabe, Satoshi Shigemi, Masato Hirose, *Honda R&D Co., Ltd.*  
Tatsuo Arai, *Osaka University*
- 57 Consistency in Physical and On-screen Action Improves Perceptions of Telepresence Robots**  
David Sirkin, Wendy Ju, *Stanford University*

## Session 3: Robot Wizards: Robot Operation and Interfaces

Session Chair: Michita Imai, *Keio University*

- 65 Real World Haptic Exploration for Telepresence of the Visually Impaired**  
Chung Hyuk Park, Ayanna M. Howard, *Georgia Institute of Technology*
- 73 Effects of Changing Reliability on Trust of Robot Systems**  
Munjal Desai, Mikhail Medvedev, *University of Massachusetts, Lowell*  
Marynel Vázquez, *Carnegie Mellon University*  
Sean McSheehy, *University of Massachusetts, Lowell*  
Sofia Gadea-Omelchenko, *University of Pittsburgh*  
Christian Bruggeman, Aaron Steinfeld, *Carnegie Mellon University*  
Holly Yanco, *University of Massachusetts, Lowell*
- 81 Teamwork in Controlling Multiple Robots**  
Fei Gao, M. L. Cummings, Luca F. Bertuccelli, *Massachusetts Institute of Technology*
- 89 Towards Human Control of Robot Swarms**  
Andreas Kolling, Steven Nunnally, Michael Lewis, *University of Pittsburgh*
- 97 Designing Interfaces for Multi-User, Multi-Robot Systems**  
 Adam Rule, *University of Washington*  
 Jodi Forlizzi, *Carnegie Mellon University*

## Session 4: LBR Highlights

Session Chairs: Astrid Weis, *University Salzburg*  
Frank Broz, *University of Hertfordshire*

- 105 A Touchscreen-Based 'Sandtray' to Facilitate, Mediate and Contextualise Human-Robot Social Interaction**  
 Paul Baxter, Rachel Wood, Tony Belpaeme, *Plymouth University*
- 107 Children's Knowledge and Expectations about Robots: A Survey for Future User-Centered Design of Social Robots**  
Eduardo Benítez Sandoval, *National University of Mexico*  
Christian I. Penalzoza, *Osaka University*
- 109 Human-Robot Interaction: Developing Trust in Robots**  
Deborah R. Billings, Kristin E. Schaefer, *University of Central Florida*  
Jessie Y. C. Chen, *Army Research Laboratory*  
Peter A. Hancock, *University of Central Florida*

# HRI 2012 Table of Contents

- 111 Dynamic Gesture Vocabulary Design for Intuitive Human-Robot Dialog**  
Saša Bodiroža, *Humboldt-Universität zu Berlin*  
Helman I. Stern, Yael Edan,  
*Ben-Gurion University of the Negev*
- 113 Design of a Haptic Joystick for Shared Robot Control**  
Daniel J. Brooks, Holly A. Yanco,  
*University of Massachusetts, Lowell*
- 115 User Experience of Industrial Robots Over Time**  
Roland Buchner, Daniela Wurhofer,  
Astrid Weiss, Manfred Tscheligi,  
*University of Salzburg*
- 117 Visual Cues-Based Anticipation for Percussionist-Robot Interaction**  
Marcelo Cicconet, Mason Bretan, Gil Weinberg,  
*Georgia Institute of Technology*
- 119 Socially Constrained Management of Power Resources for Social Mobile Robots**  
Amol Deshmukh, Ruth Aylett,  
*Heriot-Watt University*
- 121 Sensorless Collision Detection and Control by Physical Interaction for Wheeled Mobile Robots**  
Guillaume Doisy,  
*Ben-Gurion University of the Negev*
- 123 Assistive Teleoperation for Manipulation Tasks**  
Anca D. Dragan, Siddhartha S. Srinivasa,  
*Carnegie Mellon University*
- 125 'If You Sound Like Me, You Must Be More Human': On the Interplay of Robot and User Features on Human-Robot Acceptance and Anthropomorphism**  
Friederike Eyssel, Dieta Kuchenbrandt,  
Simon Bobinger, Laura de Ruiter, Frank Hegel,  
*Bielefeld University*
- 127 Beyond "Spatial Ability": Examining the Impact of Multiple Individual Differences in a Perception by Proxy Framework**  
Thomas Fincannon, Florian Jentsch,  
Brittany Sellers, Joseph R. Keebler,  
*University of Central Florida*
- 129 Attentional Human-Robot Interaction in Simple Manipulation Tasks**  
Ernesto Burattini, Alberto Finzi, Silvia Rossi,  
Mariacarla Staffa,  
*University di Napoli Federico II*
- 131 'Midas Touch' in Human-Robot Interaction: Evidence from Event-Related Potentials during the Ultimatum Game**  
Haruaki Fukuda,  
*The University of Tokyo & Crest*  
Masahiro Shiomi, *ATR*  
Kayako Nakagawa, *ATR & Osaka University*  
Kazuhiro Ueda, *The University of Tokyo & Crest*
- 133 Facial Gesture Recognition Using Active Appearance Models Based on Neural Evolution**  
Jorge García Bueno, Miguel González-Fierro,  
Luis Moreno, Carlos Balaguer, *Robotics Lab*
- 135 Design, Integration and Test of a Shopping Assistance Robot System**  
Marlon Garcia-Arroyo, Luis Felipe Marin-Urias,  
Antonio Marin-Hernandez,  
G. de J. Hoyos-Rivera,  
*Sebastian Camacho No. 5*
- 137 Handheld Operator Control Unit**  
Neal Checka, Shawn Schaffert,  
David Demirdjian, Jan Falkowski,  
Daniel H. Grollman, *Vecna Robotics*
- 139 Unveiling Robotophobia and Cyberdystopianism: The Role of Gender, Technology and Religion on Attitudes Towards Robots**  
Daniel Halpern, James E. Katz,  
*Rutgers University*
- 141 Assessing Workload in Human-Robot Peer-Based Teams**  
Caroline E. Harriott, Glenna L. Buford,  
*Vanderbilt University*  
Tao Zhang, *Purdue University*  
Julie A. Adams, *Vanderbilt University*
- 143 Does a Robot That Can Learn Verbs Lead to Better User Perception?**  
Dai Hasegawa, Kenji Araki,  
*Hokkaido University*
- 145 Towards a Computational Method of Scaling a Robot's Behavior via Proxemics**  
Zachary Henkel, Robin R. Murphy,  
*Texas A&M University*  
Cindy L. Bethel, *Mississippi State University*
- 147 Using the Behavior Markup Language for Human-Robot Interaction**  
Aaron Holroyd, Charles Rich,  
*Worcester Polytechnic Institute*
- 149 Attracting and Controlling Human Attention through Robot's Behaviors Suited to the Situation**  
Mohammed M. Hoque, Tomomi Onuki,  
Dipankar Das, Yoshinori Kobayashi,  
Yoshinori Kuno, *Saitama University*
- 151 An Intentional Framework Improves Memory for a Robot's Actions**  
Alicia M. Hymel, Daniel T. Levin,  
*Vanderbilt University*
- 153 Gestonurse: A Multimodal Robotic Scrub Nurse**  
Mithun G. Jacob, Yu-Ting Li, Juan P. Wachs,  
*Purdue University*

# HRI 2012 Table of Contents

- 155 Manipulation with Soft-fingertips for Safe pHRI**  
Jorge Armendariz, *CINVESTAV*  
Rodolfo García-Rodríguez,  
*CINVESTAV & Universidad de lo Andes*  
Felipe Machorro-Fernández,  
Vicente Parra-Vega, *CINVESTAV*
- 157 Studying Virtual Worlds as Medium for Telepresence Robots**  
Alex Juarez,  
*Eindhoven University of Technology*  
Christoph Bartneck, *Canterbury University*  
Loe M. G. Feijs,  
*Eindhoven University of Technology*
- 159 A Follow-Up on Humanoid-Mediated Stroke Physical Rehabilitation**  
Hee-Tae Jung, Yu-Kyong Choe, Jennifer Baird,  
Roderic A. Grupen,  
*University of Massachusetts, Amherst*
- 161 Personality and Facial Expressions in Human-Robot Interaction**  
Soyoung Jung, Hyoung-taek Lim,  
Sanghun Kwak, *Sungkyunkwan University*  
Frank Biocca, *Syracuse University*
- 163 Understanding Situational Awareness in Multi-Unit Supervisory Control Through Data-Mining and Modeling with Real-Time Strategy Games**  
Donald Kalar, *San Jose State University*  
Collin Green, *NASA Ames Research Center*
- 165 Cultural Studies in the HRI Loop**  
Andra Keay, *University of Sydney*
- 167 Robot Competitions as a Birth Ritual**  
Andra Keay, *University of Sydney*
- 169 Applying Team Heuristics to Future Human-Robot Systems**  
Joseph R. Keebler, Florian Jentsch,  
Thomas Fincannon,  
*University of Central Florida*  
Irwin Hudson, *Army Research Laboratory*
- 171 Deep Networks for Predicting Human Intent with Respect to Objects**  
Richard Kelley, Liesl Wigand, Brian Hamilton,  
Katie Browne, Monica Nicolescu,  
Mircea Nicolescu, *University of Nevada*
- 173 User Attentive Behavior with Camera View for In-Situ Robot Control**  
Jong-gil Ahn, Hyunseok Yang, Gerard J. Kim,  
Namgyu Kim, *Dong-eui University*
- 175 Tracking Aggregate vs. Individual Gaze Behaviors during a Robot-Led Tour Simplifies Overall Engagement Estimates**  
Heather Knight, Reid Simmons,  
*Carnegie Mellon Robotics Institute*
- 177 Real Time Interaction with Mobile Robots using Hand Gestures**  
Kishore Konda, Achim Königs,  
*Fraunhofer FKIE*  
Hannes Schulz, *University of Bonn*  
Dirk Schulz, *Fraunhofer FKIE*
- 179 Integrating Human and Computer Vision with EEG Toward the Control of a Prosthetic Arm**  
Eugene Lavelly, Geoffrey Meltzner,  
Rick Thompson, *BAE Systems*
- 181 Human-Robot Interaction in the MORSE Simulator**  
Séverin Lemaignan, *CNRS-LAAS & Université de Toulouse & Technical University of Munich*  
Gilberto Echeverria, *CNRS-LAAS & Technical University of Munich*  
Michael Karg, *Technical University of Munich*  
Jim Mainprice, *CNRS-LAAS & Technical University of Munich*  
Alexandra Kirsch,  
*Technical University of Munich*  
Rachid Alami, *CNRS-LAAS & Technical University of Munich*
- 183 Vision-Based Attention Estimation and Selection for Social Robot to Perform Natural Interaction in the Open World**  
Liyuan Li, Xinguo Yu, Jun Li, Gang Wang,  
Ji-Yu Shi, Yeow Kee Tan, Haizhou Li,  
*Institute for Infocomm Research*
- 185 A Prototyping Environment for Interaction between a Human and a Robotic Multi-Agent System**  
Michael Lichtenstern, Martin Frassl,  
Bernhard Perun, Michael Angermann,  
*German Aerospace Center*
- 187 Explaining Robot Actions**  
Meghann Lomas, Robert Chevalier,  
E. Vincent Cross II, R. Christopher Garrett,  
John Hoare, Michael Kopack,  
*Lockheed Martin Advanced Technology Laboratories*
- 189 Applying Politeness Maxims in Social Robotics Polite Dialogue**  
Looi Qin En, See Swee Lan,  
*Hwa Chong Institute*
- 191 Transfer from a Simulation Environment to a Live Robotic Environment: Are Certain Demographics Better?**  
Patricia L. McDermott, Alia Fisher,  
Thomas Carolan, Mark R. Gronowski,  
Marc Gacy, Michael Overstreet,  
*Alion Science and Technology*
- 193 A Probabilistic Framework or Autonomous Proxemic Control in Situated and Mobile Human-Robot Interaction**  
Ross Mead, Maja J. Mataric,  
*University of Southern California*

# HRI 2012 Table of Contents

- 195 Control of Human-Machine Interaction for Wide Area Search Munitions in the Presence of Target Uncertainty**  
Pia E. K. Berg-Yuen,  
*Air Force Research Laboratory*  
Siddhartha S. Mehta, *University of Florida*  
Eduardo L. Pasilliao, Robert A. Murphey,  
*Air Force Research Laboratory*
- 197 Referent Identification Process in Human-Robot Multimodal Communication**  
Yuta Shibasaki, Takahiro Inaba,  
Yukiko I. Nakano, *Seikei University*
- 199 Listener Agent for Elderly People with Dementia**  
Yoichi Sakai, Yuuko Nonaka, *Seikei University*  
Kiyoshi Yasuda, *Chiba Rosai Hospital*  
Yukiko I. Nakano, *Seikei University*
- 201 Can You Hold My Hand? Physical Warmth in Human-Robot Interaction**  
 Jiaqi Nie, Park, Angie Lorena Marin,  
*Sungkyunkwan University*  
S. Shyam Sundar,  
*Sungkyunkwan University & The Pennsylvania State University*
- 203 Captain May I? Proxemics Study Examining Factors that Influence Distance between Humanoid Robots, Children, and Adults, during Human-Robot Interaction**  
Sandra Y. Okita, *Columbia University*  
Victor Ng-Thow-Hing,  
Ravi Kiran Sarvadevabhatla,  
*Honda Research Institute USA*
- 205 Online Gaming with Robots vs. Computers as Allies vs. Opponents**  
Eunil Park, Ki Joon Kim,  
*Sungkyunkwan University*  
S. Shyam Sundar, *Sungkyunkwan University & The Pennsylvania State University*  
Angel P. del Pobil, *Sungkyunkwan University & University Jaume-I*
- 207 The Effects of Immersive Tendency and Need to Belong on Human-Robot Interaction**  
Ki Joon Kim, Eunil Park,  
*Sungkyunkwan University*  
S. Shyam Sundar, *Sungkyunkwan University & The Pennsylvania State University*  
Angel P. del Pobil, *Sungkyunkwan University & University Jaume-I*
- 209 Mechanical Model of Human Lower Arm**  
Borut Povse, Darko Koritnik,  
*Dax Electronic Systems d.o.o.*  
Tadej Bajd, Marko Munih,  
*University of Ljubljana*
- 211 Shared Gaze in Remote Spoken HRI During Distributed Military Operation**  
Zahar Prasov, *U.S. Army Research Laboratory*
- 213 A Social Robot as an Aloud Reader: Putting Together Recognition and Synthesis of Voice and Gestures for HRI Experimentation**  
Arnaud Ramey, Javier F. Gorostiza,  
Miguel A. Salichs,  
*University Carlos III of Madrid*
- 215 Modified Social Force Model with Face Pose for Human Collision Avoidance**  
Photchara Ratsamee, Yasushi Mae, Kenichi Ohara, Tomohito Takubo, Tatsuo Arai,  
*Osaka University*
- 217 The Roomba Mood Ring: An Ambient-Display Robot**  
Daniel Rea, James E. Young, Pourang Irani,  
*University of Manitoba*
- 219 How to Use Non-Linguistic Utterances to Convey Emotion in Child-Robot Interaction**  
Robin Read, Tony Belpaeme,  
*Plymouth University*
- 221 Ask, Inform, or Act: Communication with a Robotic Patient before Haptic Action**  
Timothy J. Martin, Allison P. Rzepczynski,  
Laurel D. Riek, *University of Notre Dame*
- 223 Creating Human-Robot Rapport with Mobile Sculpture**  
Tina Yue, Alexandra E. Janiw, Aaron Huus, Salvador Aguiñaga, *University of Notre Dame*  
Megan Archer, Krista Hoefle, *St. Mary's College*  
Laurel D. Riek, *University of Notre Dame*
- 225 Unsupervised Clustering of People from 'Skeleton' Data**  
Adrian Ball, David Rye, Fabio Ramos,  
Mari Velonaki, *The University of Sydney*
- 227 Immersive Human-Robot Interaction**  
Anara Sandygulova, Abraham G. Campbell,  
Mauro Dragone, G.M.P. O'Hare,  
*University College Dublin*
- 229 Don't Stand so Close to Me: Users' Attitudinal and Behavioral Responses to Personal Space Invasion by Robots**  
Aziez Sardar, Michiel Joosse,  
*University of Amsterdam*  
Astrid Weiss, *University of Salzburg*  
Vanessa Evers, *University of Twente*
- 231 Coupled Inverse-Forward Models for Action Execution Leading to Tool-Use in a Humanoid Robot**  
Guido Schillaci, Verena V. Hafner,  
*Humboldt-Universität zu Berlin*  
Bruno Lara,  
*Universidad Autónoma del Estado de Morelos*
- 233 Developing Guidelines for In-The-Field Control of a Team of Robots**  
Megha Sharma, James E. Young,  
Rasit Eskicioglu, *University of Manitoba*

# HRI 2012 Table of Contents

- 235 Is the Social Robot Probo an Added Value for Social Story Intervention for Children with ASD?**  
Ramona Simut, Johan Vanderfaeillie, Bram Vanderborght, *Vrije Universiteit Brussel*  
Cristina Pop, Sebastian Pintea, Alina Rusu, Daniel David, *Babes-Bolyai University*  
Jelle Saldien, *Howest University College*
- 237 Animal-Inspired Human-Robot Interaction: A Robotic Tail for Communicating State**  
Ashish Singh, James E. Young,  
*University of Manitoba*
- 239 Spatial Language Experiments for a Robot Fetch Task**  
Marjorie Skubic, *University of Missouri*  
Laura Carlson, Jared Miller, Xiao Ou Li,  
*University of Notre Dame*  
Zhiyu Huo, *University of Missouri*
- 241 Potential Measures for Detecting Trust Changes**  
Poornima Kaniarasu, Aaron Steinfeld,  
*Carnegie Mellon University*  
Munjal Desai, Holly Yanco,  
*University of Massachusetts, Lowell*
- 243 Affect Misattribution Procedure: An Implicit Technique to Measure User Experience in HRI**  
Ewald Strasser, Astrid Weiss,  
Manfred Tscheligi, *University of Salzburg*
- 245 Policy Transformation for Learning from Demonstration**  
Halit Bener Suay, Sonia Chernova,  
*Worcester Polytechnic Institute*
- 247 Exploration of Intention Expression for Robots**  
Ivan Shindeev, Yu Sun, Michael Coovert,  
Jenny Pavlova, Tiffany Lee,  
*University of South Florida*
- 249 Dimensions of People's Attitudes toward Robots**  
Daisuke Suzuki, Hiroyuki Umemuro,  
*Tokyo Institute of Technology*
- 251 Extending Chatterbot System into Multimodal Interaction Framework with Embodied Contextual Understanding**  
Jeffrey Too Chuan Tan, Tetsunari Inamura,  
*National Institute of Informatics*
- 253 Learning Verbs by Teaching a Care-Receiving Robot by Children: An Experimental Report**  
Fumihide Tanaka, Shizuko Matsuzoe,  
*University of Tsukuba*
- 255 A Tricycle-style Teleoperational Interface that Remotely Controls a Robot for Classroom Children**  
Fumihide Tanaka, Toshimitsu Takahashi,  
*University of Tsukuba*
- 257 Prosody-Driven Robot Arm Gestures Generation in Human-Robot Interaction**  
Amir Aly, Adriana Tapus, *ENSTA-ParisTech*
- 261 A Practical Comparison of Three Robot Learning from Demonstration Algorithms**  
 Russell Toris, Halit Bener Suay,  
Sonia Chernova,  
*Worcester Polytechnic Institute*
- 263 An Assistive Robot Contest: Designs and Interactions**  
Igor M. Verner,  
*Technion - Israel Institute of Technology*  
David J. Ahlgren, *Trinity College*
- 265 Interaction with Animated Robots in Science Museum Programs: How Children Learn?**  
Alex Polishuk, *Israel National Museum of Science, Technology and Space (MadaTech)*  
Igor Verner, *Technion - Israel Institute of Technology*
- 267 A Survey on Robot Appearances**  
Astrid von der Pütten, Nicole Krämer,  
*University of Duisburg-Essen*
- 269 Tele-Operated Robot Control Using Attitude Aware Smartphones**  
Amber M. Walker, P. Miller,  
*University of Oklahoma*
- 271 HRI Research: The Interdisciplinary Challenge or the Dawning of the Discipline?**  
Astrid Weiss, *University of Amsterdam & University of Salzburg*
- 273 Immersion with Robots in Large Virtual Environments**  
Xianshi Xie, Qiufeng Lin, Haojie Wu,  
Julie A. Adams, Bobby E. Bodenheimer,  
*Vanderbilt University*
- 275 Effect of Scenario Media on Human-Robot Interaction Evaluation**  
Qianli Xu, Jamie Suat Ling Ng,  
Yian Ling Cheong, Odelia Yiling Tan,  
*Institute for Infocomm Research & A\*STAR*  
Ji Bin Wong, Benedict Tiong Chee Tay,  
Taezoon Park,  
*Nanyang Technological University*
- 277 Development of a Jenga Game Manipulator Having Multi-articulated Fingers**  
Tsuneo Yoshikawa, Tatsuya Sugiura,  
Seiji Sugiyama, *Ritsumeikan University*
- 279 Robot Gesture and User Acceptance of Information in Human-Robot Interaction**  
Aelee Kim, Hyejin Kum, Ounjeong Roh,  
Sangseok You, Sukhan Lee,  
*Sungkyunkwan University*

# HRI 2012 Table of Contents

- 281 Establishment of Spatial Formation by a Mobile Guide Robot**  
Mohammad Abu Yousuf, Yoshinori Kobayashi,  
Yoshinori Kuno, Keiichi Yamazaki,  
*Saitama University*  
Akiko Yamazaki, *Tokyo University of Technology*
- 283 Navigating in Public Space: Participants' Evaluation of a Robot's Approach Behavior**  
Jakub A. Zlotowski, Astrid Weiss,  
Manfred Tscheligi, *University of Salzburg*

## Session 5: Conversation and Proxemics

Session Chair: Kerstin Fischer, *University of Hamburg*

- 285 Generation of Nodding, Head Tilting and Eye Gazing for Human-Robot Dialogue Interaction**  
Chaoran Liu, Carlos T. Ishi, *ATR Intelligent Robotics and Communication Labs*  
Hiroshi Ishiguro, *ATR Hiroshi Ishiguro Labs & Osaka University*  
Norihiro Hagita, *ATR Intelligent Robotics and Communication Labs*
- 293 Designing Persuasive Robots: How Robots Might Persuade People Using Vocal and Nonverbal Cues**  
Vijay Chidambaram, Yueh-Hsuan Chiang,  
Bilge Mutlu, *University of Wisconsin-Madison*
- 301 How Do People Walk Side-by-Side? Using a Computational Model of Human Behavior for a Social Robot**  
Yoichi Morales, Satoru Satake, *ATR Intelligent Robotics and Communication Laboratories*  
Rajibul Huq, *University of Toronto*  
Dylan Glas, Takayuki Kanda, Norihiro Hagita,  
*ATR Intelligent Robotics and Communication Laboratories*
- 309 A Techno-Sociological Solution for Designing a Museum Guide Robot: Regarding Choosing an Appropriate Visitor**  
Akiko Yamazaki,  
*Tokyo University of Technology*  
Keiichi Yamazaki, Takaya Ohyama,  
*Saitama University*  
Yoshinori Kobayashi,  
*Saitama University & JST, PRESTO*  
Yoshinori Kuno, *Saitama University*

## Panel

Session Chairs: Katherine Tsui,  
*University of Massachusetts, Lowell*  
Stephen von Rump, *Giraff Technologies AB*

- 317 Robots in the Loop: Telepresence Robots in Everyday Life**  
Katherine M. Tsui,  
*University of Massachusetts, Lowell*  
Stephen Von Rump, *Giraff Technologies AB*  
Hiroshi Ishiguro, *Osaka University*  
Leila Takayama, *Willow Garage*  
Peter N. Vickers, *VGo Communications*

## Session 6: Living and Working with Service Robots

Session Chair: Astrid Weiss, *University Salzburg*

- 319 Personalization in HRI: A Longitudinal Field Experiment**  
Min Kyung Lee, Jodi Forlizzi, Sara Kiesler,  
Paul Rybski, John Antanitis, Sarun Savetsila,  
*Carnegie Mellon University*
- 327 Exploring the Role of Robots in Home Organization**  
Caroline Pantofaru, Leila Takayama, Tully Foote, Bianca Soto, *Willow Garage, Inc*
- 335 The Domesticated Robot: Design Guidelines for Assisting Older Adults to Age in Place**  
Jenay M. Beer, Cory-Ann Smarr, Tiffany L. Chen, Akanksha Prakash, Tracy L. Mitzner,  
Charles C. Kemp, Wendy A. Rogers,  
*Georgia Institute of Technology*
- 343 The Effect of Monitoring by Cameras and Robots on the Privacy Enhancing Behaviors of Older Adults**  
Kelly Caine, Selma Šabanović, Mary Carter,  
*Indiana University*

## Session 7: Robots for Children

Session Chair: Hideaki Kuzuoka, *University of Tsukuba*

- 351 Children Learning with a Social Robot**  
Takayuki Kanda, Michihiro Shimada,  
Satoshi Koizumi, *ATR*
- 359 Blended Reality Characters**  
David Robert, Cynthia Breazeal,  
*Massachusetts Institute of Technology*

# HRI 2012 Table of Contents

**367 Modelling Empathic Behaviour in a Robotic Game Companion for Children: An Ethnographic Study in Real-World Settings**

Iolanda Leite, *INESC-ID and IST, Technical University of Lisbon*  
Ginevra Castellano, *University of Birmingham*  
André Pereira, Carlos Martinho, Ana Paiva, *INESC-ID and IST, Technical University of Lisbon*

## Session 8: Animating Robot Behavior

Session Chair: Sonia Chernova, *Worcester Polytechnic Institute*

**375 Enhancing Interaction Through Exaggerated Motion Synthesis**

Michael J. Gielniak, Andrea L. Thomaz, *Georgia Institute of Technology*

**383 The Illusion of Robotic Life: Principles and Practices of Animation for Robots**



Tiago Ribeiro, Ana Paiva, *Universidade Técnica de Lisboa*

**391 Trajectories and Keyframes for Kinesthetic Teaching: A Human-Robot Interaction Perspective**



Baris Akgun, Maya Cakmak, *Georgia Institute of Technology*  
Jae Wook Yoo, *Texas A&M University*  
Andrea L. Thomaz, *Georgia Institute of Technology*

## Session 9: HRI 2012 Video Session

Session Chairs: Martin Sauerbeck, *Institute of High Performance Computing* and Wendy Ju, *Stanford University*

**399 SDT: A "KonKon" Interface to Buildup the Connotation Interactions**

Yu Arita, Hirota Shinya, Yuta Yoshiike, P. Ravindra S. De Silva, Michio Okada, *Toyohashi University of Technology*

**401 Human-Swarm Interaction Through Distributed Cooperative Gesture Recognition**

Alessandro Giusti, Jawad Nagi, Luca M. Gambardella, *Dalle Molle Institute for Artificial Intelligence*  
Stéphane Bonardi, *École Polytechnique Fédérale de Lausanne*  
Gianni A. Di Caro, *Dalle Molle Institute for Artificial Intelligence*

**403 Field Trials of the Block-Shaped Edutainment Robot Hangulbot**

Sonya S. Kwak, *POSTECH*  
Eun Ho Kim, *KITECH*  
Jimyung Kim, *Miraemulsan*  
Youngbin Son, Inveom Kwak, Jun-Shin Park, Eun Wook Lee, *POSTECH*

**405 Human-Human vs. Human-Robot Teamed Investigation**

Caroline E. Harriott, Glenna L. Buford, *Vanderbilt University*  
Tao Zhang, *Purdue University*  
Julie A. Adams, *Vanderbilt University*

**407 Acting Lesson with Robot: Emotional Gestures**

Heather Knight, *Carnegie Mellon University*  
Matthew Gray, *Northeastern University*

**409 MARIOBOT : Marionette Robot that Interact with an Audience**

Woong-Ji Kim, Sun-Wook Choi, Chong Ho Lee, *INHA University*

**411 Introducing Students Grades 6-12 to Expressive Robotics**

David V. Lu, *Washington University in St. Louis*  
Ross Mead, *University of Southern California*

**413 Multi-User Multi-Touch of Multiple Simulated Robots Command and Control**

Eric J. McCann, Sean McSheehy, Holly A. Yanco, *University of Massachusetts, Lowell*

**415 Encounters: From Talking Heads to Swarming Heads**

Damith C. Herath, Christian Kroos, Stelarc, *University of Western Sydney*

**417 Johnny-0, a Compliant, Force-Controlled and Interactive Humanoid Autonomous Robot**

François Ferland, Arnaud Aumont, Dominic Létourneau, Marc-Antoine Legault, François Michaud, *Université de Sherbrooke*

**419 Situation Understanding Bot Through Language and Environment**

Daniel J. Brooks, *University of Massachusetts, Lowell*  
Constantine Lignos, *University of Pennsylvania*  
Mikhail S. Medvedev, *University of Massachusetts, Lowell*  
Ian Perera, *University of Pennsylvania*  
Cameron Finucane, Vasumathi Raman, *Cornell University*  
Abraham Shultz, Sean McSheehy, Adam Norton, *University of Massachusetts, Lowell*  
Hadas Kress-Gazit, *Cornell University*  
Mitch Marcus, *University of Pennsylvania*  
Holly A. Yanco, *University of Massachusetts, Lowell*

**421 How to Sustain Long-Term Interaction between Children and ROBOSEM in English Class**

Jeonghye Han, *Cheongju National University of Education*  
Bokhyun Kang, Seongju Park, *Yujin Robot Co., Ltd.*  
Seongwook Hong, *Grafizix Co., Ltd.*

# HRI 2012 Table of Contents

- 423 Implementing Human Questioning Strategies into Quizzing-Robot**  
Takaya Ohyama, Yasutomo Maeda, Chiaki Mori,  
*Saitama University*  
Yoshinori Kobayashi,  
*Saitama University & JST, PRESTO*  
Yoshinori Kuno, Rio Fujita, Keiichi Yamazaki,  
*Saitama University*  
Shun Miyazawa, Akiko Yamazaki,  
*Japan Science Technology Agency*  
Keiko Ikeda, *Kansai University*
- 425 Whole-Body Imitation of Human Motions with a Nao Humanoid**  
Jonas Koenemann, Maren Bennewitz,  
*University of Freiburg*
- 427 Roboscopia: A Theatre Performance for a Human and a Robot**  
Séverin Lemaignan, Mamoun Gharbi,  
Jim Mainprice, Matthieu Herrb, Rachid Alami,  
*CNRS-LAAS & Université de Toulouse*
- 429 Demonstrating Maori Haka with Kinect and Nao Robots**  
Thammathip Piumsomboon, Rory Clifford,  
Christoph Bartneck, *University of Canterbury*

## Session 10: Perception and Recognition

Session Chair: Kai Oliver Arras, *Freiburg University*

- 431 The Cocktail Party Robot: Sound Source Separation and Localisation with an Active Binaural Head**  
Antoine Deleforge, Radu Horaud,  
*INRIA Grenoble Rhône-Alpes*
- 439 Multi-party Human-Robot Interaction with Distant-Talking Speech Recognition**  
Randy Gomez, Tatsuya Kawahara,  
*Kyoto University*  
Keisuke Nakamura, Kazuhiro Nakadai,  
*Honda Research Institute (HRI-JP)*
- 447 Do You Remember that Shop? Computational Model of Spatial Memory for Shopping Companion Robots**  
Takahiro Matsumoto, Satoru Satake,  
Takayuki Kanda, Michita Imai, Norihiro Hagita,  
*ATR Intelligent Robotics and Communication Laboratory*
- 455 Color Anomaly Detection and Suggestion for Wilderness Search and Rescue**  
Bryan Morse, Daniel Thornton,  
Michael A. Goodrich, *Brigham Young University*

## Session 11: Talking with Robots: Linguistics and Natural Language

Session Chair: Bilge Mutlu, *University of Wisconsin*

- 463 Levels of Embodiment: Linguistic Analyses of Factors Influencing HRI**  
Kerstin Fischer, *University of Southern Denmark*  
Katrin S. Lohan, *Bielefeld University*  
Kilian Foth, *University of Hamburg*
- 471 Tell me when and why to do it!: Run-Time Planner Model Updates via Natural Language Instruction**  
Rehj Cantrell, *Indiana University*  
Kartik Talamadupula, *Arizona State University*  
Paul Schermerhorn, *Indiana University*  
J. Benton, Subbarao Kambhampati,  
*Arizona State University*  
Matthias Scheutz, *Tufts University*
- 479 Talking with Robots about Objects: A System-Level Evaluation in HRI**  
Julia Peltason, Nina Riether, Britta Wrede,  
Ingo Lütkebohle, *Bielefeld University*

## Session 12: Workshops & Tutorials

- 487 Human-Agent-Robot Teamwork**  
Jeffrey M. Bradshaw, *Florida Institute for Human and Machine Cognition*  
Virginia Dignum, Catholijn M. Jonker,  
*Delft University of Technology*  
Maarten Sierhuis, *Agent iSolutions*
- 489 Advances in Tactile Sensing and Touch Based Human-Robot Interaction**  
Fulvio Mastrogiovanni, Giorgio Cannata,  
*University of Genova*  
Lorenzo Natale, Giorgio Metta,  
*Italian Institute of Technology*
- 491 Gaze in HRI: From Modeling to Communication**  
Frank Broz, Hagen Lehmann,  
*University of Hertfordshire*  
Yukiko Nakano, *Seikei University*  
Bilge Mutlu, *University of Wisconsin-Madison*
- 493 ROS and Rosbridge: Roboticians Out of the Loop**  
Christopher Crick, Graylin Jay, *Brown University*  
Sarah Osentoski,  
*Bosch Research and Technology Center*  
Odest Chadwicke Jenkins, *Brown University*
- 495 Cognitive Science and Socio-Cognitive Theory for the HRI Practitioner**  
Jeffrey M. Bradshaw, *Florida Institute for Human and Machine Cognition*  
J. Chris Forsythe, *Sandia National Laboratories*
- 497 Author Index**