

## REFERENCES

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- [1] A. Kashii, K. Takashio, and H. Tokuda, “Ex-amp robot: Expressive robotic avatar with multimodal emotion detection to enhance communication of users with motor disabilities,” in *2017 26th IEEE Int. Symp. Robot and Human Interactive Communication (RO-MAN)*. IEEE, 2017, pp. 864–870.
- [2] S. Azenkot, C. Feng, and M. Cakmak, “Enabling building service robots to guide blind people a participatory design approach,” in *2016 11th ACM/IEEE Int. Conf. Human-Robot Interaction (HRI)*. IEEE, 2016, pp. 3–10.
- [3] M. J. Johnson, M. A. Johnson, J. S. Sefcik, P. Z. Cacchione, C. Mucchiani, T. Lau, and M. Yim, “Task and design requirements for an affordable mobile service robot for elder care in an all-inclusive care for elders assisted-living setting,” *Int. J. Social Robot.*, pp. 1–20, 2017.
- [4] M. Pfadenhauer and C. Dukat, “Robot caregiver or robot-supported caregiving?” *Int. J. Social Robot.*, vol. 7, no. 3, pp. 393–406, 2015.
- [5] J. Shim, R. Arkin, and M. Pettinatti, “An intervening ethical governor for a robot mediator in patient-caregiver relationship: Implementation and evaluation,” in *2017 IEEE Int. Conf. Robotics and Automation (ICRA)*. IEEE, 2017, pp. 2936–2942.
- [6] I. Aaltonen, A. Arvola, P. Heikkilä, and H. Lammi, “Hello pepper, may i tickle you?: Children’s and adults’ responses to an entertainment robot at a shopping mall,” in *Proc. 2017 ACM/IEEE Int. Conf. Human-Robot Interaction*. ACM, 2017, pp. 53–54.

- [7] A. Potnuru, M. Jafarzadeh, and Y. Tadesse, “3d printed dancing humanoid robot buddy for homecare,” in *2016 IEEE Int. Conf. Automation Science and Engineering (CASE)*. IEEE, 2016, pp. 733–738.
- [8] E. Broadbent, D. A. Feerst, S. H. Lee, H. Robinson, J. Albo-Canals, H. S. Ahn, and B. A. MacDonald, “How could companion robots be useful in rural schools?” *Int. J. Social Robot.*, pp. 1–13, 2018.
- [9] M. Blancas, V. Vouloutsis, S. Fernando, M. Sánchez-Fibla, R. Zucca, T. J. Prescott, A. Mura, and P. F. Verschure, “Analyzing children’s expectations from robotic companions in educational settings,” in *2017 IEEE-RAS 17th Int. Conf. Humanoid Robotics (Humanoids)*. IEEE, 2017, pp. 749–755.
- [10] M. M. de Graaf, S. B. Allouch, and J. A. van Dijk, “Long-term acceptance of social robots in domestic environments: In-sights from a users perspective,” in *AAAI 2016 Spring Symp. Enabling Computing Research in Socially Intelligent Human-Robot Interaction: A Community-Driven Modular Research Platform*, 2016.
- [11] W. Yuan and Z. Li, “Development of a human-friendly robot for socially aware human-robot interaction,” in *2017 2nd Int. Conf. Advanced Robotics and Mechatronics (ICARM)*. IEEE, 2017, pp. 76–81.
- [12] V. Nguyen and C. Jayawardena, “A technical review of motion prediction methods for indoor robot navigation,” Unitec Institute of Technology, New Zealand, Tech. Rep, July 2015.
- [13] M. M. De Graaf and S. B. Allouch, “Exploring influencing variables for the acceptance of social robots,” *Robotics and Autonomous Syst.*, vol. 61, no. 12, pp. 1476–1486, 2013.
- [14] J. V. Gómez, N. Mavridis, and S. Garrido, “Social path planning: Generic human-robot interaction framework for robotic navigation tasks,” in *2nd Intl. Workshop Cognitive Robotics Syst.: Replicating Human Actions and Activities*, 2013.

- [15] A. Ball, D. Rye, D. Silvera-Tawil, and M. Velonaki, “Group vs. individual comfort when a robot approaches,” in *Int. Conf. Social Robot.* Springer, 2015, pp. 41–50.
- [16] D. Karreman, L. Utama, M. Joosse, M. Lohse, B. van Dijk, and V. Evers, “Robot etiquette: How to approach a pair of people?” in *Proc. 2014 ACM/IEEE int. conf. on Human-robot interaction.* ACM, 2014, pp. 196–197.
- [17] C. Piezzo and K. Suzuki, “Feasibility study of a socially assistive humanoid robot for guiding elderly individuals during walking,” *Future Internet*, vol. 9, no. 3, p. 30, 2017.
- [18] E. T. Hall, “The hidden dimension new york,” *NY US: Doubleday & Co*, 1966.
- [19] N. Marquardt and S. Greenberg, “Informing the design of proxemic interactions,” *IEEE Pervasive Computing*, vol. 11, no. 2, pp. 14–23, 2012.
- [20] L. Takayama and C. Pantofaru, “Influences on proxemic behaviors in human-robot interaction,” in *2009. IEEE/RSJ int. con. on Intelligent robots and systems.* (IROS) IEEE, 2009, pp. 5495–5502.
- [21] E. Torta, R. H. Cuijpers, and J. F. Juola, “Design of a parametric model of personal space for robotic social navigation,” *International Journal of Social Robotics*, vol. 5, no. 3, pp. 357–365, 2013.
- [22] K. Dautenhahn, M. Walters, S. Woods, K. L. Koay, C. L. Nehaniv, A. Sissbot, R. Alami, and T. Siméon, “How may i serve you?: a robot companion approaching a seated person in a helping context,” in *Proceedings of the 1st ACM SIGCHI/SIGART conference on Human-robot interaction.* ACM, 2006, pp. 172–179.
- [23] D. S. Syrdal, K. Dautenhahn, S. Woods, M. L. Walters, and K. L. Koay, “‘doing the right thing wrong’-personality and tolerance to uncomfortable

- robot approaches,” in *Robot and Human Interactive Communication, 2006. ROMAN 2006. The 15th IEEE International Symposium on*. IEEE, 2006, pp. 183–188.
- [24] A. Ball, D. Silvera-Tawil, D. Rye, and M. Velonaki, “Group comfortability when a robot approaches,” in *International Conference on Social Robotics*. Springer, 2014, pp. 44–53.
- [25] P. A. Ruijten and R. H. Cuijpers, “Stopping distance for a robot approaching two conversating persons,” in *Robot and Human Interactive Communication (RO-MAN), 2017 26th IEEE International Symposium on*. IEEE, 2017, pp. 224–229.
- [26] T. M. Ciolek and A. Kendon, “Environment and the spatial arrangement of conversational encounters,” *Sociological Inquiry*, vol. 50, no. 3-4, pp. 237–271, 1980.
- [27] D. Karunarathne, Y. Morales, T. Kanda, and H. Ishiguro, “Model of side-by-side walking without the robot knowing the goal,” *International Journal of Social Robotics*, pp. 1–20, 2017.
- [28] G. Ferrer, A. G. Zulueta, F. H. Cotarelo, and A. Sanfeliu, “Robot social-aware navigation framework to accompany people walking side-by-side,” *Autonomous robots*, vol. 41, no. 4, pp. 775–793, 2017.
- [29] S. Satake, T. Kanda, D. F. Glas, M. Imai, H. Ishiguro, and N. Hagita, “How to approach humans?-strategies for social robots to initiate interaction,” in *2009 4th ACM/IEEE Int. Conf. on Human-Robot Interaction (HRI)*. IEEE, 2009, pp. 109–116.
- [30] T. Kanda, M. Shiomi, Z. Miyashita, H. Ishiguro, and N. Hagita, “An affective guide robot in a shopping mall,” in *2009 4th ACM/IEEE Int. Conf. on Human-Robot Interaction (HRI)*. IEEE, 2009, pp. 173–180.

- [31] A. Vitiello, G. Acampora, M. Staffa, B. Siciliano, and S. Rossi, “A neuro-fuzzy-bayesian approach for the adaptive control of robot proxemics behavior,” in *Fuzzy Systems (FUZZ-IEEE), 2017 IEEE International Conference on*. IEEE, 2017, pp. 1–6.
- [32] Z. Henkel, C. L. Bethel, R. R. Murphy, and V. Srinivasan, “Evaluation of proxemic scaling functions for social robotics,” *IEEE Transactions on Human-Machine Systems*, vol. 44, no. 3, pp. 374–385, 2014.
- [33] N. Mitsunaga, C. Smith, T. Kanda, H. Ishiguro, and N. Hagita, “Adapting robot behavior for human-robot interaction,” *IEEE Transactions on Robotics*, vol. 24, no. 4, pp. 911–916, 2008.
- [34] M. Dragone, J. Saunders, and K. Dautenhahn, “On the integration of adaptive and interactive robotic smart spaces,” *Paladyn, Journal of Behavioral Robotics*, vol. 6, no. 1, 2015.
- [35] R. Mead and M. J. Mataric, “Probabilistic models of proxemics for spatially situated communication in hri,” in *Int. Conf. on Human-Robot Interaction, Algorithmic Human-Robot Interaction Workshop*, 2014.
- [36] J. Mumm and B. Mutlu, “Human-robot proxemics: physical and psychological distancing in human-robot interaction,” in *Proceedings of the 6th international conference on Human-robot interaction*. ACM, 2011, pp. 331–338.
- [37] K. L. Koay, D. Syrdal, R. Bormann, J. Saunders, M. L. Walters, and K. Dautenhahn, “Initial design, implementation and technical evaluation of a context-aware proxemics planner for a social robot,” in *International Conference on Social Robotics*. Springer, 2017, pp. 12–22.
- [38] M. A. V. J. Muthugala and A. G. B. P. Jayasekara, “MiRob: An intelligent service robot that learns from interactive discussions while handling uncertain information in user instructions,” in *Moratuwa Engineering Research Conference (MERCon), 2016*. IEEE, 2016, pp. 397–402.

- [39] C. L. Bethel and R. R. Murphy, “Review of human studies methods in hri and recommendations,” *International Journal of Social Robotics*, vol. 2, no. 4, pp. 347–359, 2010.
- [40] E. T. Hall, “A system for the notation of proxemic behavior,” *American anthropologist*, vol. 65, no. 5, pp. 1003–1026, 1963.
- [41] I. P. Howard and B. J. Rogers, *Binocular vision and stereopsis*. Oxford University Press, USA, 1995.
- [42] G. Eresha, M. Häring, B. Endrass, E. André, and M. Obaid, “Investigating the influence of culture on proxemic behaviors for humanoid robots,” in *2013 IEEE Int. Symp. Robot and Human Interactive Communication (RO-MAN)*. IEEE, 2013, pp. 430–435.
- [43] V. Ahlstrom and K. Longo, “Human factors design standard,” Atlantic City International Airport, NJ: Federal Aviation Administration William J. Hughes Technical Center., Tech. Rep., 2003.
- [44] P. D. Ellis, *The essential guide to effect sizes: Statistical power, meta-analysis, and the interpretation of research results*. Cambridge University Press, 2010.