Academic Publications of Jannik Fritsch

September 2016

BOOKS & BOOK CHAPTERS

[1] J. Fritsch. "Towards gestural understanding for intelligent robots". **Habilitation** (*venia legendi*), Bielefeld University, 2012.

[2] Z. Li, S. Wachsmuth, J. Fritsch, and G. Sagerer. "Manipulative action recognition for human-robot interaction", **Vision Systems: Segmentation and Pattern Recognition** (G. Obinata and A. Dutta, ed.). I-Tech Education and Publishing, Vienna, Austria, 2007.

[3] J. Fritsch and S. Wrede. "An integration framework for developing interactive robots", **Springer Tracts in Advanced Robotics** (Davide Brugali, ed.), vol. 30, pp. 291–305. Springer, Berlin, 2007.

[4] B. Wrede, K. J. Rohlfing, T. P. Spexard, and J. Fritsch. "Towards tutoring an interactive robot", **Humanoid Robots, Human-like Machines** (Matthias Hackel, ed.), chapter 31, pp. 601–612. ARS, 2007.

[5] G. A. Fink, J. Fritsch, N. Leßmann, H. Ritter, G. Sagerer, J. Steil, and I. Wachsmuth. "Architectures of situated communicators: From perception to cognition to learning", **Situated Communication** (Gerd Rickheit and Ipke Wachsmuth, ed.), pp. 357–376. Mouton de Gruyter, Berlin, 2006.

[6] C. Bauckhage, G. A. Fink, J. Fritsch, N. Jungclaus, S. Kronenberg, F. Kummert, F. Lömker, G. Sagerer, and S. Wachsmuth. "Integrated perception for cooperative human-machine interaction", **Situated Communication** (Gerd Rickheit and Ipke Wachsmuth, ed.), pp. 325–356. Mouton de Gruyter, Berlin, 2006.

[7] J. Fritsch. "Vision-based recognition of gestures with context". **PhD thesis**, Faculty of Technology: Bielefeld University, 2003.

JOURNAL ARTICLES

[1] J. Fritsch, T. Kühnl, and F. Kummert. "Monocular road terrain detection by combining visual and spatial information", ***IEEE Transactions on Intelligent Transportation Systems***, 15(4):1586-1596, August 2014.

[2] K. Pitsch, A. Vollmer, K. Rohlfing, J. Fritsch, and B. Wrede. "Tutoring in adult-child-interaction: On the loop of the tutor's action modification and the recipient's gaze", ***Interaction Studies***, 15(1):55–98, 2014.

[3] A. Vollmer, M. Mühlig, J. Steil, K. Pitsch, J. Fritsch, K. Rohlfing, and B. Wrede. "Robots show us how to teach them: Feedback from robots shapes tutoring behavior during action learning", ***PLoS ONE***, 9(3):e91349, March 2014.

[4] R. Kastner, T. Michalke, J. Adamy, J. Fritsch, and C. Goerick. "Task-based environment interpretation and system architecture for next generation ADAS", ***Intelligent Transportation Systems Magazine***, IEEE, 3(4):20–33, winter 2011.

[5] A. Gepperth, S. Hasler, S. Rebhan, and J. Fritsch. "Biased competition in visual processing hierarchies: A learning approach using multiple cues", ***Cognitive Computation***, 3(1):146–166, 2011.

[6] T. Michalke, J. Fritsch, and C. Goerick. "A biologically-inspired vision architecture for resource-constrained intelligent vehicles", ***Computer Vision and Image Understanding****, Special Issue: Intelligent Vision Systems For Computer Vision and Image Understanding*, 114:548–563, 2010.

[7] T. Michalke, R. Kastner, J. Adamy, S. Bone, F. Waibel, M. Kleinehagenbrock, J. Gayko, A. Gepperth, J. Fritsch, and C. Goerick. "An attention-based system approach for scene analysis in driver assistance", ***at Automatisierungstechni****k*, 56(11):575–584, 2008.

[8] K. J. Rohlfing, J. Fritsch, B. Wrede, and T. Jungmann. "How can multimodal cues from child-directed interaction reduce learning complexity in robots?", ***Advanced Robotics***, 20(10):1183–1199, 2006.

[9] M. Hackel, M. Schwope, J. Fritsch, B. Wrede, and G. Sagerer. "Designing a sociable humanoid robot for interdisciplinary research", ***Advanced Robotics***, 20(11):1219–1235, 2006.

[10] G. A. Fink, J. Fritsch, S. Hohenner, M. Kleinehagenbrock, S. Lang, and G. Sagerer. "Towards multi-modal interaction with a mobile robot", ***Pattern Recognition and Image Analysis*****,** 14(2):173–184, 2004.

[11] J. Fritsch, M. Kleinehagenbrock, S. Lang, T. Plötz, G. A. Fink, and G. Sagerer. "Multi-modal anchoring for human-robot-interaction", ***Robotics and Autonomous Systems****: Special Issue on Anchoring Symbols to Sensor Data in Single and Multiple Robot Systems*, 43(2–3):133–147, 2003.

[12] C. Bauckhage, J. Fritsch, and G. Sagerer. "*Erkennung von Aggregaten aus Struktur und Handlung* (Recognition of assemblies from structure and action)", ***Künstliche Intelligenz*** *(Artificial Intelligence)*, 3:4–11, 1999.

CONFERENCE PUBLICATIONS

[0] E. Casapietra, T. Weisswange, C. Goerick, F. Kummert, J. Fritsch. "Building a probabilistic grid-based road representation from direct and indirect visual cues", *Intelligent Vehicles Symposium (IV)*. IEEE, June 2015.

[1] T. Kühnl and J. Fritsch. "Visio-spatial road boundary detection for unmarked urban and rural roads", *Intelligent Vehicles Symposium (IV)*. IEEE, June 2014.

[2] A. Alin, M. Butz, and J. Fritsch. "Improved tracking and behavior detection by using environment knowledge from online map databases in Bayesian-filtering", *IEEE Intelligent Transportation Systems Conference (ITSC)*. IEEE, October 2013.

[3] J. Fritsch, A. Geiger, and T. Kühnl. "A new performance measure and evaluation benchmark for road detection algorithms", *IEEE Intelligent Transportation Systems Conference (ITSC)*. IEEE, October 2013.

[4] T. Weisswange, B. Bolder, J. Fritsch, S. Hasler, and C. Goerick. "An integrated ADAS for assessing risky situations in urban driving", *IEEE Intelligent Vehicles Symposium 2013*. IEEE, June 2013.

[5] T. Kühnl, F. Kummert, and J. Fritsch. "Image-based lane level positioning using spatial ray features", *Intelligent Vehicles Symposium (IV)*. IEEE, March 2013.

[6] S. Ehrenfeld, A. Alin, J. Fritsch, and M. Butz. "Assigning plausibilities to probabilistic representations for information selection", *11th Biannual Conference of the German Cognitive Science Society Kogwis 2012*, Bamberg, Germany, 2012. Univ. of Bamberg Press.

[7] T. Kühnl, F. Kummert, and J. Fritsch. "Spatial ray features for real-time ego-lane extraction", *IEEE International Conference on Intelligent Transportation Systems (ITSC)*, pp. 288–293, Anchorage, Alaska, USA, 2012. IEEE.

[8] A. Alin, M. Butz, and J. Fritsch. "Incorporating environmental knowledge into Bayesian filtering using attractor functions", *IEEE Intelligent Vehicles Symposium (IV)*, Alcala De Henares, Spain, 2012. IEEE.

[9] T. Kühnl, F. Kummert, and J. Fritsch. "Monocular road segmentation using slow feature analysis", *Proceedings of the IEEE Intelligent Vehicles Symposium*, Washington, USA, 2011.

[10] M. Garcia Ortiz, J. Fritsch, F. Kummert, and A. Gepperth. "Behavior prediction at multiple time-scales in inner-city scenarios", *Proceedings of the IEEE Intelligent Vehicles Symposium*, Washington, USA, 2011.

[11] A. Alin, M. Butz, and J. Fritsch. "Tracking moving vehicles using an advanced grid-based Bayesian filter approach", *Proceedings of the IEEE Intelligent Vehicles Symposium*, Washington, USA, 2011.

[12] R. Kastner, T. Kuehnl, J. Fritsch, and C. Goerick. "Detection and motion estimation of moving objects based on 3D-warping", *Proceedings of the IEEE Intelligent Vehicles Symposium*, Washington, USA, 2011.

[13] M. Heracles, F. Martinelli, and J. Fritsch. "Vision-based behavior prediction in urban traffic environments by scene categorization", *British Machine Vision Conference*, 2010.

[14] J. Schmüdderich, N. Einecke, S. Hasher, A. Gepperth, B. Bolder, R. Kastner, M. Franzius, S. Rebhan, B. Dittes, H. Wersing, J. Eggert, J. Fritsch, and C. Goerick. "System approach for multi-purpose representations of traffic scene elements", *IEEE International Conference on Intelligent Transportation Systems*, pp. 1677–1684. IEEE, 2010.

[15] A. Vollmer, K. Pitsch, K. S. Lohan, J. Fritsch, K. Rohlfing, and B. Wrede. "Developing feedback: How children of different age contribute to a tutoring interaction with adults", *Proceedings of the International Conference on Development and Learning*, pp. 76–81, 2010.

[16] M. Garcia Ortiz, A. Gepperth, and J. Fritsch. "Autonomous generation of internal representations for associative learning", *International Conference on Artificial Neural Networks (ICANN*), Lecture Notes in Computer Science. Springer Verlag, 2010.

[17] T. Michalke, R. Kastner, J. Fritsch, and C. Goerick. "A self-adaptive approach for curbstone/roadside detection based on human-like signal processing and multi-sensor fusion", *Proceedings of the IEEE Intelligent Vehicles Symposium*, San Diego, 2010.

[18] R. Kastner, T. Michalke, J. Fritsch, and C. Goerick. "Towards a task dependent representation generation for scene analysis", *Proceedings of the IEEE Intelligent Vehicles Symposium*, San Diego, 2010.

[19] R. Kastner, T. Michalke, T. Burbach, J. Fritsch, and C. Goerick. "Attention-based traffic sign recognition with an array of weak classifiers", *Proceedings of the IEEE Intelligent Vehicles Symposium*, San Diego, 2010.

[20] B. Dittes, A. Gepperth, A. Ceravola, J. Fritsch, and C. Goerick. "Self-management for neural dynamics in brain-like information processing", *Proceedings of the International Conference on Autonomic Computing and Communications*. ACM, 2009.

[21] M. Garcia Ortiz and A. Gepperth. "Local self-adaptation mechanisms for large-scale neural system building", *Proceedings of the 2nd International Conference on Cognitive Neurodynamics*, Hangzhou, China, 2009. Springer.

[22] B. Dittes, M. Heracles, T. Michalke, R. Kastner, A. Gepperth, J. Fritsch, and C. Goerick. "A hierarchical system integration approach with application to visual scene exploration for driver assistance", *Proceedings of the 7th International Conference on Computer Vision Systems*, pp. 255–264. Springer, 2009.

[23] M. Heracles, U. Körner, T. Michalke, G. Sagerer, J. Fritsch, and C. Goerick. "A dynamic attention system that reorients to unexpected motion in real-world traffic environments", *IEEE/RSI International Conference on Robots and Systems*, 2009.

[24] R. Kastner, F. Schneider, T. Michalke, J. Fritsch, and C. Goerick. "Image-based classification of driving scenes by hierarchical principal component classification (HPCC)", *Proceedings of the IEEE Intelligent Vehicles Symposium*, Xi'an, China, 2009.

[25] T. Michalke, R. Kastner, J. Fritsch, and C. Goerick. "Towards a proactive biologically-inspired advanced driver assistance system", *Proceedings of the IEEE Intelligent Vehicles Symposium*, Xi'an, China, 2009.

[26] T. Michalke, R. Kastner, M. Herbert, J. Fritsch, and C. Goerick. "Adaptive multi-cue fusion for robust detection of unmarked inner-city streets", *Proceedings of the IEEE Intelligent Vehicles Symposium*, Xi'an, China, 2009.

[27] A.-L. Vollmer, K. Lohan, K. Fischer, Y. Nagai, K. Pitsch, J. Fritsch, K. Rohlfing, and B. Wrede. "People modify their tutoring behavior in robot-directed interaction for action learning", *Proceedings of the International Conference on Development and Learning*, vol. 8, Shanghai, China, 2009. IEEE.

[28] K. Pitsch, A. Vollmer, J. Fritsch, B. Wrede, K. Rohlfing, and G. Sagerer. "On the loop of action modification and the recipient's gaze in adult-child interaction", *Gesture and Speech in Interaction*, Poznan, Poland, 2009.

[29] A. Vollmer, K. Lohan, J. Fritsch, B. Wrede, and K. Rohlfing. "Which motionese parameters change with children's age?", *Cognitive Development Society, VI Biennial Meeting*, 2009.

[30] K.S. Lohan, A.L. Vollmer, J. Fritsch, K. Rohlfing, and B. Wrede. "Which ostensive stimuli can be used for a robot to detect and maintain tutoring situations?", *IEEE International Workshop on Social Signal Processing*, 2009.

[31] T. Michalke, R. Kastner, J. Fritsch, and C. Goerick. "A generic temporal integration approach for enhancing feature-based road-detection systems", *Intelligent Transportation Systems Conference*, Beijing, 2008. IEEE Press.

[32] J. Fritsch, T. Michalke, A. Gepperth, S. Bone, F. Waibel, M. Kleinehagenbrock, J. Gayko, and C. Goerick. "Towards a human-like vision system for driver assistance", *Proceedings of the IEEE Intelligent Vehicles Symposium*. IEEE, 2008.

[33] A. Gepperth, J. Fritsch, and C. Goerick. "Cross-module learning as a first step towards a cognitive system concept", *Proceedings of the First International Conference on Cognitive Systems*. IEEE Press, 2008.

[34] T. Michalke, J. Fritsch, and C. Goerick. "Enhancing robustness of a saliency-based attention system for driver assistance", *The 6th International Conference on Computer Vision Systems (ICVS)*, *Lecture Notes in Computer Science* (LNCS), Santorini, Greece, 2008. Springer Verlag Berlin Heidelberg New York.

[35] A. Gepperth, B. Mersch, C. Goerick, and J. Fritsch. "Color object recognition in real-world scenes", *International Conference on Artificial Neural Networks, Part II, Lecture Notes in Computer Science*, pp. 583–592. Springer Verlag, 2007.

[36] J. Schmidt, N. Hofemann, A. Haasch, J. Fritsch, and G. Sagerer. "Interacting with a mobile robot: Evaluating gestural object references", *IEEE/RSI International Conference on Robots and Systems*, Nice, France, 2008.

[37] T. Michalke, A. Gepperth, M. Schneider, J. Fritsch, and C. Goerick. "Towards a human-like vision system for resource-constrained intelligent cars", *Proceedings of the 5th International Conference on Computer Vision Systems (ICVS 2007)*. Universitätsbibliothek Bielefeld, 2007.

[38] Z. Li, S. Wachsmuth, J. Fritsch, and G. Sagerer. "Semi-supervised incremental learning of manipulative tasks", *Proceedings of the IAPR Conference on Machine Vision Applications*, pp. 73–77, Tokyo, Japan, 2007.

[39] Z. Li, S. Wachsmuth, J. Fritsch, and G. Sagerer. "View-adaptive manipulative action recognition for robot companions", *IEEE/RSI International Conference on Robots and Systems*, San Diego, Ca, USA, 2007.

[40] Z. Li, J. Fritsch, S. Wachsmuth, and G. Sagerer. "An object-oriented approach using a top-down and bottom-up process for manipulative action recognition", *Lecture Notes in Computer Science* (K. Franke, K. Müller, B. Nickolay, and R. Schäfer, ed.), vol. 4174, pp. 212–221, Heidelberg, Germany, 2006. Springer-Verlag.

[41] J. Schmidt, B. Kwolek, and J. Fritsch. "Kernel particle filter for real-time 3D body tracking in monocularcolor images", *Proceedings of the IEEE International Conference on Automatic Face and Gesture Recognition*, pp. 567–572, Southampton, Uk, 2006. IEEE.

[42] F. Lömker, S. Wrede, M. Hanheide, and J. Fritsch. "Building modular vision systems with a graphical plugin environment", *Proceedings of the International Conference on Vision Systems*, St. Johns University, Manhattan, New York City, USA, 2006. IEEE.

[43] T. Spexard, A. Haasch, J. Fritsch, and G. Sagerer. "Human-like person tracking with an anthropomorphic robot", *Proceedings of the International Conference on Robotics and Automation*, pp. 1286–1292, Orlando, Florida, 2006. IEEE.

[44] T. Spexard, S. Li, B. Wrede, J. Fritsch, G. Sagerer, O. Booij, Z. Zivkovic, B. Terwijn, and B. Kröse. "BIRON, where are you? Enabling a robot to learn new places in a real home environment by integrating spoken dialog and visual localization", *IEEE/RSI International Conference on Robots and Systems*, pp. 934–940, Beijing, China, 2006.

[45] J. F. Maas, T. Spexard, J. Fritsch, B. Wrede, and G. Sagerer. "BIRON, what's The Topic? A multi-modal topic tracker for improved human-robot interaction", *Proceedings of the IEEE International Workshop on Robot-Human Interactive Communication*, pp. 26–32, 2006.

[46] B. Wrede, M. Kleinehagenbrock, and J. Fritsch. "Towards an integrated robotic system for interactive learning in a social context", *IEEE/RSI International Conference on Robots and Systems*, Beijing, China, 2006.

[47] I. Toptsis, A. Haasch, S. Hüwel, J. Fritsch, and G.A. Fink. "Modality integration and dialog management for a robotic assistant", *Proceedings of the European Conference on Speech Communication and Technology*, Lisboa, Portugal, 2005.

[48] S. Li, A. Haasch, B. Wrede, J. Fritsch, and G. Sagerer. "Human-style interaction with a robot for cooperative learning of scene objects", *Proceedings of the International Conference on Multimodal Interfaces*, pp. 151–158, Trento, Italy, 2005. ACM Press.

[49] J. Fritsch, N. Hofemann, and K. Rohlfing. "Detecting 'when to imitate' in a social context with a human caregiver", *Proceedings of the IEEE ICRA, Workshop on The Social Mechanisms of Robot Programming By Demonstration*, Barcelona, Spain, April 2005.

[50] J. Fritsch, B. Wrede, and G. Sagerer. "Bringing it all together: Integration to study embodied interaction with a robot companion", *AISB 2005 Symposium – Robot Companions: Hard Problems and Open Challenges in Robot-Human Interaction*, Hatfield, England, 2005.

[51] J. Fritsch, M. Kleinehagenbrock, A. Haasch, S. Wrede, and G. Sagerer. "A flexible infrastructure for the development of a robot companion with extensible HRI-capabilities", *Proceedings of the IEEE International Conference on Robotics and Automation*, pp. 3419–3425, Barcelona, Spain, 2005.

[52] B. Möller, S. Posch, A. Haasch, J. Fritsch, and G. Sagerer. "Interactive object learning for robot companions using mosaic images", *IEEE/RSI International Conference on Robots and Systems*, pp. 371–376, Edmonton, Alberta, Canada, August 2005. IEEE.

[53] A. Haasch, N. Hofemann, J. Fritsch, and G. Sagerer. "A multi-modal object attention system for a mobile robot", *IEEE/RSI International Conference on Robots and Systems*, pp. 1499–1504, Edmonton, Alberta, Canada, 2005. IEEE.

[54] M. Hackel, St. Schwope, J. Fritsch, B. Wrede, and G. Sagerer. "A humanoid robot platform suitable for studying embodied interaction", *IEEE/RSI International Conference on Robots and Systems*, pp. 56–61, Edmonton, Alberta, Canada, 2005.

[55] Z. Li, N. Hofemann, J. Fritsch, and G. Sagerer. "Hierarchical modeling and recognition of manipulative gesture", *Proceedings of the IEEE ICCV, Workshop on Modeling People and Human Interaction*, Beijing, China, 2005.

[56] B. Wrede, A. Haasch, N. Hofemann, S. Hohenner, S. Hüwel, M. Kleinehagenbrock, S. Lang, S. Li, I. Toptsis, G. A. Fink, J. Fritsch, and G. Sagerer. "Research issues for designing robot companions: BIRON as a case study", *Proceedings of the IEEE Conference on Mechatronics and Robotics* (P. Drews, ed.), vol. 4, pp. 1491–1496. Eysoldt-Verlag, Aachen, 2004.

[57] S. Wrede, J. Fritsch, C. Bauckhage, and G. Sagerer. "An XML based framework for cognitive vision architectures", *Proceedings of the International Conference on Pattern Recognition, Number 1*, pp. 757–760, 2004.

[58] S. Li, M. Kleinehagenbrock, J. Fritsch, B. Wrede, and G. Sagerer. "BIRON, let me show you something: Evaluating the interaction with a robot companion", *Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics, Special Session on Human-Robot Interaction* (W. Thissen, P. Wieringa, M. Pantic, and M. Ludema, ed.), pp. 2827–2834. IEEE, 2004.

[59] N. Hofemann, J. Fritsch, and G. Sagerer. "Recognition of deictic gestures with context", *Lecture Notes in Computer Science* (C. E. Rasmussen, H. H. Bülthoff, M. A. Giese, and B. Schölkopf, ed.), vol. 3175, pp. 334–341, Heidelberg, Germany, 2004. Springer-Verlag.

[60] A. Haasch, S. Hohenner, S. Hüwel, M. Kleinehagenbrock, S. Lang, I. Toptsis, G. A. Fink, J. Fritsch, B. Wrede, and G. Sagerer. "BIRON – The Bielefeld robot companion", *Proceedings of the International Workshop on Advances in Service Robotics* (E. Prassler, G. Lawitzky, P. Fiorini, and M. Hägele, ed.), pp. 27–32, Stuttgart, Germany, 2004. Fraunhofer Irb Verlag.

[61] J. Fritsch, M. Kleinehagenbrock, S. Lang, G. A. Fink, and G. Sagerer. "Audiovisual person tracking with a mobile robot", *Proceedings of the International Conference on Intelligent Autonomous Systems* (F. Groen, N. Amato, A. Bonarini, E. Yoshida, and B. Kröse, ed.), pp. 898–906, Amsterdam, 2004. Ios Press.

[62] J. Fritsch, N. Hofemann, and G. Sagerer. "Combining sensory and symbolic data for manipulative gesture recognition", *Proceedings of the International Conference on Pattern Recognition*, pp. 930–933, Cambridge, United Kingdom, 2004. IEEE.

[63] K. Rohlfing, J. Fritsch, and B. Wrede. "Learning to manipulate objects: A quantitative evaluation of motionese", *Proceedings of the International Conference on Development and Learning*, p. 27, La Jolla, Ca, 2004.

[64] M. Kleinehagenbrock, J. Fritsch, and G. Sagerer. "Supporting advanced interaction capabilities on a mobile robot with a flexible control system", *IEEE/RSI International Conference on Robots and Systems*, vol. 3, pp. 3649–3655, Sendai, Japan, 2004.

[65] S. Lang, M. Kleinehagenbrock, S. Hohenner, J. Fritsch, G. A. Fink, and G. Sagerer. "Providing the basis for human-robot-interaction: A multi-modal attention system for a mobile robot", *Proceedings of the International Conference on Multimodal Interfaces*, pp. 28–35, Vancouver, Canada, 2003. ACM.

[66] G. A. Fink, J. Fritsch, N. Leßmann, H. Ritter, G. Sagerer, J. Steil, and I. Wachsmuth. "*Architekturen situierter Kommunikatoren: Von Perzeption Über Kognition zum Lernen* (Architectures of situated communicators: From perception over cognition to learning)", *Lecture Notes in Informatics* (K. Dittrich, W. König, A. Oberweis, K. Rannenberg, and W. Wahlster, ed.), vol. P-35, pp. 29–44. Gesellschaft für Informatik, 2003.

[67] J. Fritsch, S. Lang, M. Kleinehagenbrock, G. A. Fink, and G. Sagerer. "Improving adaptive skin color segmentation by incorporating results from face detection", *Proceedings of the IEEE International Workshop on Robot-Human Interactive Communication*, pp. 337–343, Berlin, Germany, 2002.

[68] G. Sagerer, C. Bauckhage, E. Braun, J. Fritsch, F. Kummert, F. Lömker, and S. Wachsmuth. "Structure and process: Learning of visual models and construction plans for complex objects", *Lecture Notes in Computer Science* (G.D. Hager, H. Christensen, H. Bunke, and R. Klein, ed.) 2238, pp. 317–344. Springer, 2002.

[69] P. Mcguire, J. Fritsch, J. J. Steil, F. Röthling, G. A. Fink, S. Wachsmuth, G. Sagerer, and H. Ritter. "Multi-modal human-machine communication for instructing robot grasping tasks", *IEEE/RSI International Conference on Robots and Systems*, pp. 1082–1089. IEEE, 2002.

[70] S. Lang, M. Kleinehagenbrock, J. Fritsch, G. A. Fink, and G. Sagerer. "Detection of communication partners from a mobile robot", *Proceedings of the 4th Workshop on*

Dynamic Perception, pp. 183–188, Bochum, Germany, 2002. Akademische Verlagsgesellschaft Aka Gmbh, Berlin.

[71] M. Kleinehagenbrock, S. Lang, J. Fritsch, F. Lömker, G. A. Fink, and G. Sagerer. "Person tracking with a mobile robot based on multi-modal anchoring", *Proceedings of the IEEE International Workshop on Robot-Human Interactive Communication*, pp. 423–429, Berlin, Germany, September 2002. IEEE.

[72] C. Bauckhage, J. Fritsch, K.J. Rohlfing, S. Wachsmuth, and G. Sagerer. "Evaluating integrated speech and image understanding", *Proceedings of the IEEE International Conference on Multimodal Interfaces*, pp. 9–14, Pittsburgh, Pa, 2002.

[73] C. Bauckhage, G. A. Fink, J. Fritsch, F. Kummert, F. Lömker, G. Sagerer, and S. Wachsmuth. "An integrated system for cooperative man-machine interaction", *IEEE International Symposium on Computational Intelligence in Robotics and Automation*, pp. 328–333, Banff, Canada, 2001.

[74] E. Braun, J. Fritsch, and G. Sagerer. "Incorporating process knowledge into object recognition for assemblies", *Proceedings of the International Conference on Computer Vision*, pp. 726–732, Vancouver, Ca, 2001.

[75] C. Bauckhage, J. Fritsch, and G. Sagerer. "Memorizing visual knowledge for assembly process monitoring", *Lecture Notes in Computer Science* (B. Radig and S. Florczyk, ed.) 2191, pp. 178–185. Springer, 2001.

[76] J. Fritsch, F. Lömker, M. Wienecke, and G. Sagerer. "Detecting assembly actions by scene observation", *Proceedings International Conference on Image Processing*, *Volume* I, pp. 212–215, Vancouver, Sep. 2000. IEEE.

[77] J. Fritsch, F. Lömker, M. Wienecke, and G. Sagerer. "*Erkennung von Konstruktionshandlungen aus Bildfolgen* (Recognition of manipulation actions from image sequences)", *Informatik Aktuell* (Recent computer science), pp. 389–396, Kiel, 2000. Springer-Verlag.

[78] J. Fritsch, H. Brandt-Pook, and G. Sagerer. "Combining planning and dialog for cooperative assembly construction", *IJCAI-99 Workshop Planning and Scheduling Meet Real-Time Monitoring in A Dynamic and Uncertain World*, pp. 59–64, Stockholm, 1999.

[79] C. Bauckhage, J. Fritsch, F. Kummert, and G. Sagerer. "Towards a vision system for supervising assembly processes", *Proceedings of the Symposium on Intelligent Robotic Systems*, pp. 89–98, Coimbra, 1999.