

# List of publications

[\*] ... First author

## Books

[B1\*] Hülse, M.: *Multifunktionalität rekurrenter neuronaler Netze - Synthese und Analyse nichtlinearer Kontrolle autonomer Roboter*, Dissertationen zur Künstlichen Intelligenz (DISKI) 306, ISBN 978-3-89838-306-6, AKA GmbH, Berlin, Germany, 216 pages, 2007.

## Journals

[J9] Law, J., Lee, M., Hülse, M., Tomassetti, A.: The Infant Development Timeline and its Application to Robot Shaping. *Adaptive Behavior*, accepted.

[J8] Geng, T., Hülse, M., Lee, M.: Transferring human grasp synergies to a robot. *Mechatronics* **21**(1), 272-284, 2011.

[J7\*] Hülse, M., McBride, S., Law, J., Lee, M.: Integration on Active Vision and Reaching from a Developmental Robotics Perspective. *IEEE Transactions on Autonomous Mental Development*, **2**(4), 355-367, 2010.

[J6\*] Hülse, M.: From Sierpinski carpets to directed graphs. *Complex Systems*, **19**(1), 45-71, 2010.

[J5\*] Hülse, M., McBride, S., Lee, M.: Fast learning mapping schemes for robotic hand-eye coordination. *Cognitive Computation* **2**(1), 1-16, 2010.

[J4\*] Hülse, M., Hild, M.: Informatics for cognitive robots. *Advanced Engineering Informatics* **24**(1), 2-3, 2010.

[J3] Wischmann, S., Hülse, M., Knabe, J., Pasemann, F.: Synchronization of internal neural rhythms in multi-robotic systems. *Adaptive Behavior* **14**(2): 117-127, 2006.

[J2\*] Hülse, M., Wischmann, S., and Pasemann F.: Structure and function of evolved neuro-controllers for autonomous robots. *Connection Science*, **16**(4): 249-266, 2004.

[J1] Pasemann, F., Steinmetz, U., Hülse, M., Lara, B.: Robot Control and the Evolution of Modular Neurodynamics. *Theory in Biosciences*, **120**, 311-326, 2001.

## Invited article

[I2\*] Hülse, M., Wischmann, S., Zahedi, K., ISEE - A Framework for the Evolution and Analysis of Recurrent Neural Networks for Embodied Agents. *ERCIM News*, 64, 2006.

[I1] Zahedi, K., Hülse, M., Pasemann, F.: Evolution nicht-linearer Controller für mobile Roboter in dynamischen Umgebungen. *atp - automatisierungstechnische praxis*, **10**, 94-100, 2004.

## Book chapters

[BC4\*] Lee, M., Law, J., Hülse, M.: A developmental framework for versatile intrinsically motivated learning robots. In: *Intrinsically motivated cumulative learning*. To be published by MIT Press, 2011.

[BC3\*] Hülse, M., Wischmann, S., Manoonpong, P., Twickel, A.v., Pasemann, F.: Dynamical Systems in the Sensorimotor Loop: On the Interrelation Between Internal and External Mechanisms of Evolved Robot Behavior. In: M. Lungarella, F. Iida, J. Bongard, R. Pfeifer (Eds.) *50 Years of Artificial Intelligence*, LNCS 4850, Springer, 186 - 195, 2007.

[BC2] Negrello, M., Hülse, M., Pasemann, F.: Adaptive Neurodynamics. In: S. Shan, A. Yang (Eds.) *Applications of Complex Adaptive Systems*, IGI Global Publishing, USA, 82 - 108, 2007.

[BC1\*] Hülse, M., Zahedi, K., Pasemann, F.: Representing robot-environment interactions by dynamical features of neuro-controllers. In: Butz, M. et al (Eds.) *Anticipatory Behavior in Adaptive Learning Systems*, LNAI 2684, Springer, 222-242, 2003.

## Conferences

- [C23\*] Hülse M., McBride, S., Lee, M.: Developmental robotics architecture for active vision and reaching. In: Proc. ICDL-EPIROB 2011, Frankfurt/Main, Germany, (to appear)
- [C22\*] Hülse, M., McBride, S., Lee, M.: Multi-modal visual attention for robotics active vision systems - A reference architecture. In: Kazakov, D., Tsoulas, G. (Eds.) Proc. AISB 2011 Symposium on Architectures for Active Vision, York, 2011, 21-29.
- [C21] Law, J., Lee, M., Hülse, M., Tomassetti, A.: Infant development sequences for shaping learning in humanoid robots. In: Johansson, B., Sahin, E., Balkenius, Ch. (Eds.) Proc. 10th Int. Conf. on Epigenetic Robotics 2010 (EpiRob 2010), Lund University Cognitive Studies, 149, Sweden, 2010, 65-72.
- [C20\*] Hülse, M., Lee, M.: Adaptation of coupled sensorimotor mappings: An investigation towards developmental learning of humanoids. In: Doncieux, S. et al. (Eds.) SAB 2010, Paris, France, Springer, LNAI 6226, 468-477, 2010.
- [C19\*] Hülse, M., McBride, S., Lee, M.: An evaluation of gaze modulated spatial visual search for robotic active vision. In: Belpaeme, T. et al (Eds.): TAROS 2010, Uni. of Plymouth, UK, 83-90, 2010.
- [C18\*] Hülse, M., Labrosse, F., Lee, M.: On the reduction of raw image data in the context of the appearance-based approach to robot navigation. In: Belpaeme, T. et al (Eds.): TAROS 2010, Uni. of Plymouth, UK, 76-82, 2010.
- [C17\*] Hülse, M., Lee, M.: The Logic of Robotics Inspired Biology. In: Proc. of the International Symposium on AI-Inspired Biology, Chappell, J., Thorpe, S., Hawes, N., Sloman, A. (Eds.) at the AISB 2010 convention, De Montfort University, Leicester, UK, 43-50, 2010.
- [C16\*] Hülse M., McBride, S., Lee, M.: Robotic hand-eye coordination without global reference: A biologically inspired learning scheme. In: Proc. ICDL 2009, China, IEEE Catalog Number: CFP09294, 6 p., 2009.
- [C15\*] Hülse, M.: Generating complex connectivity structures for large-scale neural models. In: V. Kurkova, R. Neruda, and J. Koutnik (eds): ICANN 2008, Part II, LNCS 5164, 849-858, 2008.
- [C14\*] Hülse, M., Hild, M.: Current software frameworks in cognitive robotics integrating different computational paradigms. In Hülse, M., Hild, M. (eds), IROS Workshop on Current software frameworks in cognitive robotics integrating different computational paradigms, IROS 2008, Nice, France, 3-4, 2008.
- [C13\*] Hülse, M., Lee, M.: Aspects of sustainable software design for complex robot platforms in multi-disciplinary research projects on embodied cognition. In Hülse, M., Hild, M. (eds), IROS Workshop on Current software frameworks in cognitive robotics integrating different computational paradigms, IROS 2008, Nice, France, 33-38, 2008.
- [C12\*] Hülse, M., Barr, D. R. W., Dudek, P.: Cellular Automata and non-static image processing for embodied robot systems on a massively parallel processor array. In: Adamatzky, A. et al. (eds) AUTOMATA 2008, Theory and Applications of Cellular Automata. Luniver Press, 504-510, 2008.
- [C11\*] Hülse, M., Pasemann, F.: Modular design of irreducible systems. In: Nolfi, S. et al. (eds): SAB 2006, LNAI 4095, 534-545, 2006.
- [C10\*] Hülse, M., Wischmann, S., Pasemann, F.: The role of non-linearity for evolved multifunctional robot behavior. In: Moreno, J. M., Madrenas, J., Cosp, J.(eds) ICES 2005, LNCS 3637, Springer, 108-118, 2005.
- [C9] Wischmann, S., Hülse, M., Pasemann, F.: (Co)Evolution of (de)centralized neural control for a gravitationally driven machine. In: Capcarrere et al. (eds) ECAL 2005, LNAI 3630, Springer, 179-188, 2005.
- [C8\*] Hülse, M., Pasemann, F.: Expansion of Neuro-Modules by Structure Evolution. In: Gross, H. M., Debes, K., Boehme, H.J. (eds.), SOAVE 2004, Fortschritt-Berichte VDI 743, Germany, 135-145, 2004.
- [C7] Zahedi, K., Hülse, M., Pasemann, F.: Evolving Neurocontrollers in the RoboCup Domain. Robotik 2004, VDI-Berichte, 1841, Germany, 63-70, 2004.
- [C6\*] Pasemann, F., Hülse, M., Zahedi, K., Evolved Neurodynamics for Robot Control, in: M.Verleysen (ed.), European Symposium on Artificial Neural Networks'2003, D-side publications, 439-444, 2003.
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[C3\*] Hülse, M., Pasemann, F.: Dynamical Neural Schmitt Trigger for Robot Control. J. R. Dorronsoro(ed.): ICANN 2002, LNCS 2415, Springer, 783-788, 2002.

[C2] Pasemann, F., Steinmetz, U., Hülse, M., Lara, B.: Evolving brain structures for robot control. IWANN'01, LNCS, Springer, 2001.

[C1\*] Hülse, M., Lara, B., Pasemann, F., Steinmetz, U.: Evolving neural behavior control for autonomous robots. G. Dorffner, H. Bischof, and K. Hornik (eds): ICANN 2001, LNCS 2130, 957-962, 2001.

## Abstracts

[A8] Geng, T., Wilson, J., Sheldon, M., Hülse, M., Lee, M.: Affordance learning for robot grasping. In: Johansson, B., Sahin, E., Balkenius, Ch. (Eds) Proc. 10th Int. Conf. on Epigenetic Robotics 2010 (EpiRob 2010), Lund University Cognitive Studies, 149, Sweden, 2010, 167-168.

[A7\*] Hülse, M., McBride, S., Lee, M.: Gaze modulated visual search integrating spatial and feature data; embodied visual memory II. In: Johansson, B., Sahin, E., Balkenius, Ch. (Eds) Proc. 10th Int. Conf. on Epigenetic Robotics 2010 (EpiRob 2010), Lund University Cognitive Studies, 149, Sweden, 2010, 167-168.

[A6\*] Hülse, M.: Generation of complex artificial neural networks for fast robotic learning. Int. WS AMORPH, Sheffield, UK, 2010.

[A5] McBride, S., Hülse, M., Lee, M.: Robotic implementation of inhibition of return; potential insight into the biological equivalent. Proceedings of the Physiological Society, 17, PC13, 47, 2009.

[A4] Baldassare, G. et al.: The IM-CLeVeR Project: Intrinsically Motivated Cumulative Learning Versatile Robots. In: Canamero, L., Oudeyer, P.-Y., Balkenius, C. (Eds) Proc. of the 9th Int. Conf. on Epigenetic Robotics: Modeling Cognitive Development in Robotic Systems. Lund University Cognitive Studies, 146, pp. 189 - 190, 2009.

[A3\*] Hülse, M., McBride, S., Lee, M.: Implementing inhibition of return; embodied visual memory for robotic systems. In: Canamero, L., Oudeyer, P.-Y., Balkenius, C. (Eds) Proc. of the 9th Int. Conf. on Epigenetic Robotics: Modeling Cognitive Development in Robotic Systems. Lund University Cognitive Studies, 146, pp. 189 - 190, 2009.

[A2] Ziemke, T., Borghi, A., Anelli, F., Gianelli, C., Binkovski, F., Buccino, G., Gallese, V., Hülse, M., Lee M., Nicoletti, R., Parisi, D., Riggio, L., Tessari, A. Sahin, E.: ROSSI: Emergence of communication in Robots through Sensorimotor and Social Interaction. International Conference on Cognitive Systems (CogSys 2008), University of Karlsruhe, Karlsruhe, Germany, 2008

[A1\*] Hülse, M., Zahedi, K., Wischmann, S., Pasemann, F.: In the search of principles underlying cognitive phenomena. Proc. 50<sup>th</sup> Anniversary Summit of Artificial Intelligence, Monte Verita, Switzerland, 9-14 July, 2006.

## Other publications

[O3] Karaoguz, C., Drix, D., Potapova, E., Hülse, M. (2011). Curiosity driven exploration of sensory-motor mappings. Deliverable for the IM-CLeVeR Spring School at the Capo Caccia Cognitive Neuromorphic Engineering Workshop, 1-7 May 2011(<http://hdl.handle.net/2160/7197>).

[O2\*] Hülse, M.: The Contactimprovisation Community and the internet in the context of diversity. European Contactimprovisation Teachers' Exchange, ECITE 2009, Omskirk, UK, 2009.

[O1] Lara, B., Hülse, M., Pasemann, F.: Evolving Different Neuro-Modules and their Interfaces to Control Autonomous Robots, World Multiconference on Systemics, Cybernetics and Informatics 2001, Proceedings, Vol. IX, 2001.