

# Mathis Marius Richter

Institut für Neuroinformatik  
Ruhr-Universität Bochum  
Universitätsstraße 150  
44780 Bochum, Germany

phone: +49 234-32-25559  
email: [mathis.richter@ini.rub.de](mailto:mathis.richter@ini.rub.de)  
URL: <http://www.mathisrichter.de>

Born: June 19, 1984—Bochum, Germany  
Nationality: German

## Current position

*PhD student & research associate*  
Institut für Neuroinformatik, Ruhr-Universität Bochum

## Areas of specialization

Embodied cognition • Autonomous robotics

## Education

2011-present	PhD student, Advisor: Prof. Dr. Gregor Schöner, Ruhr-Universität Bochum
2011	MSc in Applied Computer Science (very good, 93 percent), Ruhr-Universität Bochum
2010	BSc in Applied Computer Science (very good, 81 percent), Ruhr-Universität Bochum
2008-2011	Applied Computer Science, Ruhr-Universität Bochum
2007-2008	Computer Science (Erasmus Exchange Program), University of Birmingham, England
2004-2007	Applied Computer Science, Ruhr-Universität Bochum

## Work experience

2011-present	Research associate, Institut für Neuroinformatik, Ruhr-Universität Bochum
2010-2011	Research assistant, Institut für Neuroinformatik, Ruhr-Universität Bochum
2008-2010	Student assistant, Institut für Neuroinformatik, Ruhr-Universität Bochum
2006	Two-week internship, NEC High Performance Computing Europe, Hamburg
2004-2007	Student job, Elisabeth Hospital, Bochum
2003-2004	Community service, Elisabeth Hospital, Bochum

## School education

2003	Abitur (GPA 2.7)
2001-2003	Hellweg-Schule, Bochum
2000-2001	East Union High School (EF Exchange Program), Afton, Iowa, USA
1994-2000	Hellweg-Schule, Bochum
1990-1994	Dietrich Bonhoeffer Grundschule, Bochum

## Publications

### CONFERENCE PROCEEDINGS

- 2014 Oubbati, F., Richter, M., and Schöner, G. (2014). “A neural dynamics to organize timed movements: Demonstration in a robot ball bouncing task”. *Fourth Joint IEEE International Conference on Development and Learning and Epigenetic Robotics (ICDL-Epirob 2014)*. (to appear).
- 2014 Richter, M., Lins, J., Schneegans, S., and Schöner, G. (2014). “A neural dynamic architecture resolves phrases about spatial relations in visual scenes”. In S. Wermter et al. (Eds.): *ICANN 2014, LNCS 8681*, pp. 201–208, 2014, Springer International Publishing Switzerland. *Best paper award*.
- 2014 Richter, M., Lins, J., Schneegans, S., Sandamirskaya, Y., and Schöner, G. (2014). “Autonomous neural dynamics to test hypotheses in a model of spatial language”. In P. Bello, M. Guarini, M. McShane, & B. Scassellati (Eds.), *Proceedings of the 36th Annual Conference of the Cognitive Science Society*, pp. 2847–2852. Austin, TX: Cognitive Science Society.
- 2013 Lomp, O., Zibner, S. K. U., Richter, M., Rañó, I., and Schöner, G. (2013). “A software framework for Cognition, Embodiment, Dynamics, and Autonomy in Robotics: cedar”. *Proceedings of the International Conference on Artificial Neural Networks (ICANN 2013)*.
- 2013 Kazerounian, S., Luciw, M., Richter, M., Sandamirskaya, Y. (2013). “Autonomous reinforcement of behavioral sequences in neural dynamics”. *Proceedings of the International Joint Conference on Neural Networks (IJCNN 2013)*.
- 2012 Richter, M., Sandamirskaya, Y., and Schöner, G. (2012). “A robotic architecture for action selection and behavioral organization inspired by human cognition”. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2012)*, pp. 2457–2464.
- 2011 Sandamirskaya, Y., Richter, M., and Schöner, G. (2011). “A neural dynamic architecture for behavioral organization of an embodied agent”. *IEEE International Conference on Development and Learning and on Epigenetic Robotics (ICDL EPIROB 2011)*.

### CONFERENCE ABSTRACTS

- 2012 Kazerounian, S., Luciw, M., Richter, M., Sandamirskaya, Y. (2012). “Autonomous reinforcement of behavioral sequences in neural dynamics”. *Proceedings of the Second Joint Conference on Development and Learning and Epigenetic Robotics (ICDL-EPIROB 2012)*.
- 2012 Richter, M., Sandamirskaya, Y.. (2012). “Neural dynamics for behavioral organization of an embodied agent”. *Sixteenth International Conference on Cognitive and Neural Systems*.
- 2011 Sandamirskaya, Y., Richter, M., and Schöner, G. (2011). “Neural dynamics of sequence generation and behavioral organization”. *Front. Comput. Neurosci. Conference Abstract: BC11 : Computational Neuroscience & Neurotechnology Bernstein Conference & Neurex Annual Meeting 2011*.

### CONFERENCE WORKSHOPS

- 2013 Luciw, M., Kazerounian, S., Richter, M., and Sandamirskaya, Y. (2013). “Sampling behavioral spaces with dynamic neural fields”. *Robotics Science and Systems (RSS) workshop on “Hierarchical and Structured Learning for Robotics”*, Berlin, Germany, June 27.
- 2013 Oubbati, F., Richter, M., and Schöner, G. (2013). “A hierarchical, neural-dynamic architecture generating sequences of timed movements”. *Robotics Science and Systems (RSS) workshop on “Hierarchical and Structured Learning for Robotics”*, Berlin, Germany, June 27.
- 2013 Luciw, M., Lahkman, K., Richter, M., Kazerounian, S., and Sandamirskaya, Y. (2013). “Learning the perceptual conditions of satisfaction of elementary behaviors”. *Robotics Science and Systems (RSS) workshop on Active Learning in Robotics: Exploration, Curiosity, and Interaction*, Berlin, Germany, June 27.

## THESES

- 2011 Richter, Mathis (2011). “A neural dynamic architecture for the behavioral organization of an autonomous robotic agent”, *Master thesis*.
- 2010 Richter, Mathis (2010). “Using Enhanced Tree Growing Neural Gas networks to represent knowledge derived from artificial and real-world data”, *Bachelor thesis*.

## IT & programming skills

*Object-oriented programming:* C++, Python, Java  
*Frameworks and tools:* Qt, CMake, Mercurial, Subversion  
*Operating systems:* Linux, Windows  
*Typesetting:* L<sup>A</sup>T<sub>E</sub>X  
*Web:* HTML, CSS

## Languages

*Deutsch* (native speaker)  
*English* (professional proficiency)

## Interests

Sport climbing, Jazz guitar, running, photography