

Contact Information

Position Assistant Professor
Institute Robotics and Computer Vision
Computer Science and System Engineering Department
École Nationale Supérieure Techniques Avancées- ParisTech
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Research Interests

Robotics, Artificial Intelligence, Cognitive Science
Movement Primitives, Reinforcement Learning, Stochastic Optimization, Developmental Robotics,
Mobile Manipulation, Symbolic Planning, Imitation Learning, Variable Impedance Control, Robot Action Modeling, Analysis and Modeling of Human Motion Data

Education**10/2007** **Doctorate in Computer Science**

Technische Universität München, Munich, Germany
Degree: Dr.rer.nat., Magna Cum Laude
Thesis: Tailoring robot actions to task contexts using action models
Supervisor: Prof. Michael Beetz

08/2001 **Doctorandus in Cognitive Science and Engineering**

University of Groningen, Groningen, Netherlands
Degree: Doctorandus, Cum Laude (best of year)
Thesis: Completion of occluded surfaces
Supervisors: Dr. Henk Mastebroek, Prof. John Hallam, Prof. Bob Fisher
Award: 'Best Master's Thesis Prize 2001' from Artificial Intelligence Education in the Netherlands

01/1996 **Propedeuse in Biology**

University of Groningen, Groningen, Netherlands
Degree: 'Propedeuse', as a prerequisite for Cognitive Science and Engineering.

Professional Experience**11/2011** **École Nationale Supérieure Techniques Avancées**

- *Assistant Professor*
current Cognitive Robotics, ENSTA-ParisTech
École Nationale Supérieure Techniques Avancées, Paris, France

06/2011 **Technische Universität Berlin**

- *Postdoctoral Research Fellow*
10/2011 Robotics and Biology Laboratory, Department of Electrical Engineering and Computer Science
Technische Universität Berlin, Berlin, Germany
Topic: Adaptive exploration for reinforcement learning.
Funding: Return Grant from the German Research Foundation (Deutsche Forschungsgemeinschaft)

- 08/2009** **University of Southern California**
 - *Postdoctoral Research Fellow*
- 06/2011** Computational Learning and Motor Control Lab, Viterbi School of Engineering
 University of Southern California, Los Angeles, USA
Topic: Learning task-relevant parameters for human and robot motion primitives to acquire complex manipulation skills on a humanoid robot.
Funding: Post-doctoral Research Fellowship from the German Research Foundation (Deutsche Forschungsgemeinschaft - DFG)
- 01/2009** **Advanced Telecommunications Research Institute International**
 - *Postdoctoral Research Fellow*
- 03/2009** Computational Neuroscience Laboratories
 Advanced Telecommunications Research Institute International, Kyoto, Japan
Topic: Modeling tracked human reaching data, and implementing these models on the CB-i humanoid robot using Dynamic Movement Primitives.
Funding: Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellowship
- 05/2008** **Technische Universität München**
 - *Postdoctoral Research Associate*
- 07/2009** Intelligent Autonomous Systems Group, Department of Computer Science
 Technische Universität München, Munich, Germany
Topic: Developing computational and control models of pick-and-place tasks in the context of everyday manipulation activities in human environments, and implementing these models on mobile manipulation platforms.
Funding: Post-doctoral research assistant, funded by the project “*CogMan – Cognitive Models of Everyday Manipulation Tasks*”, in the DFG Cluster of Excellence “*CoTeSys – Cognition for Technical Systems*”.
- 01/2007** **University of Bremen**
 - *Postdoctoral Research Associate*
- 04/2008** Cognitive Neuroinformatics Group, Faculty of Computer Science
 University of Bremen, Bremen, Germany
Topic: Developing hierarchical sensori-motor representations for autonomous agent control in a virtual reality environment. Also leader of the largest workpackage (¿ 14 person-years) in the EU-project “SHARE-it”.
Funding: As a post-doctoral research assistant, funded by the project “*ActionSpace: Spatial Exploration Based on an Integrated Representation of Sensory Features and Motor Actions*”, as part of the DFG Transregional Collaborative Research Center “*Spatial Cognition: Reasoning, Action, Interaction*”. Also funded by the EU-project “*SHARE-it: Supported Human Autonomy for Recovery and Enhancement of cognitive and motor abilities using Information Technologies*”.
- 05/2002** **Technische Universität München**
 - *Research Assistant (PhD student)*
- 09/2006** Intelligent Autonomous Systems Group, Department of Computer Science
 Technische Universität München, Munich, Germany
Topic: Learning compact action models for robot using experience-based learning. Applying these models in the context of plan optimization, transformation and coordination. The application domains are robotic soccer, arm control and mobile manipulation.
Funding: As a Ph.D. student/research assistant, funded by the project “*AGILO: Semi-Automatic Acquisition of Visuomotoric Plans*”, as part of the DFG priority program “*Cooperating Teams of Mobile Robots in Dynamic Environments*”, which focussed on RoboCup.

- 06/2001** **Instituto Superior Técnico**
 - *Visiting Researcher*
- 12/2001** VisLab, Instituto de Sistemas e Robotica
 Instituto Superior Técnico, Lisbon, Portugal
Topic: 2.5D range image segmentation and modeling with shape primitives. Detection and completion of occlusions in range images of building interiors.
Funding: As a visiting researcher, funded by the EU project “CAMERA: CAd Modelling of Built Environments from Range Analysis”.
- 09/2000** **University of Edinburgh**
 - *Research Assistant*
- 05/2001** Machine Vision Unit, Department of Artificial Intelligence
 University of Edinburgh, Edinburgh, United Kingdom
Topic: 2.5D range image segmentation and modeling with shape primitives. Detection and completion of occlusions in range images of building interiors.
Funding: As a research assistant, funded by the EU project “CAMERA: CAd Modelling of Built Environments from Range Analysis”.
- 1991** **Miscellaneous jobs**
 - paper delivery, bookbinder, pastry baker, butcher’s assistant, Christmas decorator, shop assistant,
1999 petrol station supervisor, dairy factory worker, construction site cleaner, removal assistant, metal factory worker, to name a few.

Awards

- 2013** ‘King-Sun Fu Best Paper Award of the IEEE Transactions on Robotics for the year 2012’ for the article ‘Reinforcement Learning with Sequences of Motion Primitives for Robust Manipulation’ - Freek Stulp, Evangelos Theodorou, and Stefan Schaal.
- 2012** ‘Paper of Excellence Award’ at the International Conference on Development and Learning (ICDL), for the paper “Emergent proximo-distal maturation through adaptive exploration” – Freek Stulp and Pierre-Yves Oudeyer
- 2011** ‘Best poster for technical strength’ at a research review of the Computer Science department at the University of Southern California, for the poster ‘Movement Segmentation using a Primitive Library’ - Franziska Meier, Evangelos Theodorou, Freek Stulp, Stefan Schaal.
- 2010** Best paper finalist at the 10th IEEE-RAS International Conference on Humanoid Robots, for the paper: Freek Stulp, Jonas Buchli, Evangelos Theodorou, and Stefan Schaal – Reinforcement learning of full-body humanoid motor skills.
- 2001** Best Master’s Thesis Prize, academic year 2000/2001, by Artificial Intelligence Education in the Netherlands (KION).

Grants and Fellowships

- 2014** EU FET Project “DREAM” (500k EUR)
- 2013** “Allocation doctorale” (funding for a PhD student) from Digiteo (100k EUR)
- 2011** Return Grant from the German Research Foundation (DFG), 3 months
- 2009** Research Fellowship from the German Research Foundation (DFG), 2 years
- 2009** Postdoctoral Fellowship from the Japan Society for the Promotion of Science (JSPS), 2 months
- 2008** Grant from the Bavaria California Technology Center (BaCaTec) to visit the Computational Learning and Motor Control Lab at the University of Southern California.

Teaching and Supervision

PhD student supervision (day-to-day)

- 2015- Clément Masson – Deep Learning for Skill Segmentation
- 2014- Adrien Matricon – Autonomous Discovery of Parameterized Skills
- 2014- Gennaro Raiola – Libraries of Motion Primitives as Active Virtual Fixtures for Co-manipulation
- 2011 Andreas Fedrizzi – Action-Related Places for Mobile Manipulation

Undergraduate student project supervision

A '*' indicates that at least one conference publication arose from the project.

- 2014* Nicolas Torres Alberto – Computed Torque Control with Variable Gains
- 2013* Laura Vogelaar – On-line Option Discovery and De-Aliasing for Direct Policy Search
- 2013* Gennaro Raiola – Learning Parameterized Skills through Models with Expanded Kernels (MSc.)
- 2008 Fadoua Fakhfakh – Evaluation methodologies in assistance systems (Dipl.)
- 2008 Etienne Bousquié (ENSTA) – Analyse de trajectoires de préhension lors de l'évitement d'un objet
- 2007 Interact (Collaborative student project with 20 students)
- 2006* Wolfram Koska – Optimizing service robot plans by tuning unbound action parameters (Dipl.)
- 2006* Mark Pflüger – Feature space transformation using directed equation discovery (Dipl.)
- 2006* Michael Isik – Implicit coordination in heterogeneous robot teams with action models (Dipl.)
- 2005 Max Rietmann (Cornell) – Implementation of a C++ interface for the Roboteq AX2550 Controller
- 2005* Michael Isik – Installing a CORBA based framework on the AGILO RoboCup robots (SEP)
- 2004 Nadine Perera, Tobias Gradl – A tool for exploratory data analysis for RoboCup logfiles (SEP)
- 2004 Markus Rieger - Resolving problems in a USB interface by actively scheduling threads (SEP)

Seminars and Courses

- 02/2013- Coordinator of the first year computer science courses (IN101, IN102, IN103, IN104)
current ENSTA-ParisTech, Paris, France.
- 09/2014- Course "IN101 Algorithmique et Programmation (en Python)": organizer/lecturer (140 students), and
current tutor (20 students)
ENSTA-ParisTech, Paris, France.
- 11/2014- Course "IN102 Système et Programmation (en C)": tutor (20 students)
current ENSTA-ParisTech, Paris, France.
- 04/2013- Course "IN104 Projet informatique": organizer/lecturer (140 students), and tutor (16 students)
current ENSTA-ParisTech, Paris, France.
- 09/2012- Course "IN101 Algorithmique et Programmation": tutor (16 students)
07/2014 ENSTA-ParisTech, Paris, France.
- 10/2002- Intelligent Autonomous Systems seminar (organizer, 7 editions with a total of 50 students)
05/2006 Technische Universität München, Munich, Germany.
- 09/2005- Discrete Structures course (tutor for 40 students)
05/2006 Technische Universität München, Munich, Germany.
- 09/2000- Introduction to Informatics and Java courses (tutor for 30 students)
05/2001 Department of Informatics, University of Edinburgh, Edinburgh, United Kingdom.
- 03/1999- Introduction to Artificial Intelligence course (tutor for 30 students)
12/2000 Cognitive Science and Engineering, University of Groningen, The Netherlands. Together with a fellow student a large-scale didactic tool was implemented (in Java) to introduce students to the concepts of second order logic.

Other Professional Activities

Workshop Organization

- 2015** Workshop on “Physical Human-Robot Collaboration: Safety, Control, Learning and Applications”, held in conjunction with the IEEE/RSJ International Conference on Intelligent Robots and Systems, with Andrej Gams and Sylvain Calinon
- 2013** Workshop on “Hierarchical and Structured Learning for Robotics”, held in conjunction with Robotics: Science and Systems Conference (RSS), with Gerhard Neumann, George Konidaris, and Jan Peters. (#participants>25)
- 2011** Workshop on “A Comparison of Reinforcement Learning and Optimal Control Methods for Real-World Robotic Tasks”, held in conjunction with Robotics: Science and Systems Conference (RSS), with Evangelos Theodorou and Stefan Schaal. (#participants>30)
- 2009** Workshop on “Robust and Legible Manipulation in Human Environments”, held in conjunction with the International Conference on Advanced Robotics (ICAR2009), with Michael Beetz and Jan Paulus. (#participants>25)
- 2004** Workshop on “Methods and Technology for Empirical Evaluation of Multi-agent Systems and Multi-robot Teams (MTEE)”, held in conjunction with the 27th German Conference on Artificial Intelligence (KI2004), with Hans Utz and Bernhard Nebel. (#participants>35)
- 2004** Chair of the mid-size league at the German Open robot soccer competitions.
- 2004** Workshop on “Verhaltensbeschreibung und Programmierung”, held in context of the the DFG priority program “Cooperating Teams of Mobile Robots in Dynamic Environments” (SPP1125), with Dr. Jan Hoffmann (#participants>15).

Program Committees Memberships and Reviewing

Robotics

Journals: • IEEE Transactions on Robotics • Robotics and Autonomous Systems • Autonomous Robots • Journal of Intelligent and Robotic Systems • IEEE Transactions on Mechatronics • IEEE Transactions on Control Systems Technology.

Conferences: • Robotics: Science and Systems (RSS) – 2014-2015 (PC). • Int’l Conf. on Robotics and Automation (ICRA) – 2008-2013 (reviewer), 2014-2016 (Associate Editor), . • Int’l Conf. on Intelligent Robots and Systems (IROS) – 2009-2013 (reviewer), 2014 (PC) • Int’l Conf. on Development and Learning (ICDL) – 2010-2012 (PC). • Int’l Conf. on Humanoids Robots (Humanoids) – 2011-2014

Artificial Intelligence

Journals: • Artificial Intelligence Magazine. • Transactions on Autonomous Mental Development.

Conferences: • AAI Conference on Artificial Intelligence (AAAI) – 2008 (PC) • Künstliche Intelligenz (2004-2006) • SOFSEM – 2007 (PC)

Computer Vision

Conferences: • International Conference on Pattern Recognition (ICPR) – 2006 • German Association for Pattern Recognition (DAGM) – 2003

Outreach

- Print** My RoboCup-related research has been published in several print media, e.g. Süddeutsche Zeitung, Audlmax, and Siemens Magazine.
- TV** I have been interviewed for the German ARD television show “Willi Will’s Wissen” on our robot soccer team, the “Agilo RoboCuppers”.
- Demos** One of the Munich soccer robots was exhibited at the Deutsche Museum for two months, as part of the exposition “Innovationen im Fussball”. We also presented our robot soccer team to the public at demonstration games at the SiemensForum in Munich, and Wissenschaftstag at the Technische Universität München.

Language Skills

Fluent: Dutch, English, German

Conversational: French, Spanish

Programming: C++, C, Python, Matlab, Perl, Java, Prolog, Linux shell scripting

Publication List

Complete list is here: <http://www.freekstulp.net/publications/>

Journal Articles

- 2015** F. Stulp and O. Sigaud. Many regression algorithms, one unified model - A review. *Neural Networks*, 2015.
- 2013** F. Stulp and P.-Y. Oudeyer. Adaptive Exploration through Covariance Matrix Adaptation Enables Developmental Motor Learning. *Paladyn. Journal of Behavioral Robotics*, 2013.
- 2013** O. Sigaud and F. Stulp. Adaptation de la matrice de covariance pour l'apprentissage par renforcement direct. Revue d'Intelligence Artificielle (RIA), special issue on "Apprentissage par renforcement pour la conduite de systèmes", 2013.
- 2013** F. Stulp and O. Sigaud. Robot Skill Learning: From Reinforcement Learning to Evolution Strategies. *Paladyn. Journal of Behavioral Robotics*, 2013
- 2012** Stulp, F., Theodorou, E., Schaal, S. Hierarchical reinforcement learning for robust manipulation. *IEEE Transactions on Robotics*, 28(6):1360–1370, 2012. **King-Sun Fu Best Paper Award of the IEEE Transactions on Robotics for the year 2012**
- 2012** Stulp, F., Buchli, B., Ellmer A., Mistry, M., Theodorou, E., Schaal, S. Model-free Reinforcement Learning of Impedance Control in Stochastic Force Fields. *IEEE Transactions on Autonomous Mental Development*, 4(4):330–341, 2012.
- 2012** Pastor, P., Kalakrishnan, M., Meier, F., Stulp, F., Buchli, J., Theodorou, E., and Schaal, S. From Dynamic Movement Primitives to Associative Skill Memories. *Robotics and Autonomous Systems*, 2012.
- 2012** Stulp, F., Fedrizzi, A., Mösenlechner, L., Beetz, M. Learning and reasoning with action-related places for robust mobile manipulation. *Journal of Artificial Intelligence Research (JAIR)*, 43:1–42, January 2012.
- 2011** Buchli, J., Stulp, F., Theodorou, E., and Stefan Schaal. Learning variable impedance control. *International Journal of Robotics Research*, 2011.
- 2010** Beetz, M., Stulp, F., Piotr Esden-Tempski, Fedrizzi, A., Klank, U., Kresse, I., Maldonado, A., and Federico Ruiz. Generality and legibility in mobile manipulation - learning skills for routine tasks. *Autonomous Robots: Special Issue on Autonomous Mobile Manipulation*, 28(1):21–44, January 2010.
- 2010** Stulp, F., Utz, H., Isik, M., and Gerd Mayer. Implicit coordination with shared belief: A heterogeneous robot soccer team case study. *Robotics, A., the International Journal of the Robotics Society of Japan*, 24(7):1017–1036, May 2010.
- 2008** F. Stulp and Michael Beetz. declarative, C., procedural and predictive knowledge to generate and execute robot plans efficiently and robustly. *Robotics and Autonomous Systems (Special Issue on Semantic Knowledge in Robotics)*, 56(11):967–979, 2008.
- 2008** F. Stulp and Michael Beetz. Refining the execution of abstract actions with learned action models. *Journal of Artificial Intelligence Research (JAIR)*, 32, June 2008.
- 2008** Wimmer, M., Stulp, F., Pietzsch, S., and Bernd Radig. Learning local objective functions for robust face model fitting. *IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI)*, 30(8), 2008.
- 2008** Sandra H. Budde, Stulp, F., and Dario L. Sancho-Pradel. Using persona descriptions as a communication tool in interdisciplinary system design. *Gerontechnology*, 7(2), 2008.
- 2004** Beetz, M., Schmitt, T., Hanek, R., Buck, S., Stulp, F., Derik Schröter, and Bernd Radig. The AGILO 2001 robot soccer team: Experience-based learning and probabilistic reasoning in autonomous robot control. *Robots, A., special issue on Analysis and Experiments in Distributed Multi-Robot Systems*, 17(1):55–77, July 2004.
- 2002** F. Stulp and Rineke Verbrugge. A knowledge-based algorithm for the internet transmission control protocol (TCP) (journal version). *Bulletin of Economic Research*, 54(1):69–94, January 2002. Blackwell Ltd, P., Oxford, UK Boston, USA.

Theses

- 2007** Freek Stulp. *Tailoring Robot Actions to Task Contexts using Action Models*. PhD thesis, Technische Universität München, 2007.

2001 Freek Stulp. Completion of occluded surfaces. Master's thesis, University of Groningen, Groningen, The Netherlands, August 2001. Awarded the **Best Master's Thesis Prize**, academic year 2000/2001 by Artificial Intelligence Education in the Netherlands.

Refereed Conference Papers

- 2015 Gennaro Raiola, Xavier Lamy, and Freek Stulp. Co-manipulation with Multiple Probabilistic Virtual Guides. In *International Conference on Intelligent Robots and Systems (IROS)*, 2015.
- 2015 Gennaro Raiola, Pedro Rodriguez-Ayerbe, Xavier Lamy, Sami Tliba, and Freek Stulp. Parallel Guiding Virtual Fixtures: Control and Stability. In *IEEE Multi-Conference on Systems and Control (MSC)*, 2015.
- 2015 Freek Stulp, Jonathan Grizou, Baptiste Busch, and Manuel Lopes. Facilitating Intention Prediction for Humans by Optimizing Robot Motions. In *International Conference on Intelligent Robots and Systems (IROS)*, 2015.
- 2014 Nicolas Torres Alberto, Michael Mistry, and Freek Stulp. Computed Torque Control with Variable Gains through Gaussian Process Regression. In *IEEE-RAS International Conference on Humanoid Robots*, 2014.
- 2014 Freek Stulp, Laura Herlant, Antoine Hoarau, and Gennaro Raiola. Simultaneous On-line Discovery and Improvement of Robotic Skill Options. In *Proceedings of the International Conference on Intelligent Robots and Systems (IROS)*, 2014.
- 2014 Munzer, T., Stulp, F., and Sigaud, O.. Non-linear regression algorithms for motor skill acquisition: a comparison. In *Proceedings JFPDA*, pp. 1–16, 2014.
- 2013 Freek Stulp, Gennaro Raiola, Antoine Hoarau, Serena Ivaldi, and Olivier Sigaud. Learning Compact Parameterized Skills with a Single Regression. Accepted for *IEEE-RAS International Conference on Humanoid Robots*, 2013.
- 2012 Freek Stulp and Olivier Sigaud. Path integral policy improvement with covariance matrix adaptation. In *Proceedings of the 29th International Conference on Machine Learning (ICML)*, 2012.
- 2012 Carmen Lopera, Hilario Tomé, Adolfo Rodríguez Tsouroukdissian, and Freek Stulp. Comparing motion generation and motion recall for everyday robotic tasks. In *12th IEEE-RAS International Conference on Humanoid Robots*, 2012.
- 2012 Freek Stulp. Adaptive exploration for continual reinforcement learning. In *International Conference on Intelligent Robots and Systems (IROS)*, 2012.
- 2012 Freek Stulp and Pierre-Yves Oudeyer. Emergent proximo-distal maturation through adaptive exploration. In *International Conference on Development and Learning (ICDL)*, 2012. **Paper of Excellence Award.**
- 2012 Freek Stulp and Olivier Sigaud. Adaptation de la matrice de covariance pour l'apprentissage par renforcement direct. In *7èmes Journées Francophones Planification, Décision, et Apprentissage pour la conduite de systèmes*, 2012.
- 2011 Freek Stulp and Stefan Schaal. Hierarchical reinforcement learning with motion primitives. In *11th IEEE-RAS International Conference on Humanoid Robots*, 2011.
- 2011 Freek Stulp, Evangelos Theodorou, Mrinal Kalakrishnan, Peter Pastor, Ludovic Righetti, and Stefan Schaal. Learning motion primitive goals for robust manipulation. In *International Conference on Intelligent Robots and Systems (IROS)*, 2011.
- 2011 Franziska Meier, Evangelos Theodorou, Freek Stulp, and Stefan Schaal. Movement segmentation using a primitive library. In *International Conference on Intelligent Robots and Systems (IROS)*, 2011.
- 2011 Freek Stulp, Jonas Buchli, Alice Ellmer, Michael Mistry, Evangelos Theodorou, and Stefan Schaal. Reinforcement learning of impedance control in stochastic force fields. In *International Conference on Development and Learning (ICDL)*, 2011.
- 2011 Evangelos Theodorou, Freek Stulp, Jonas Buchli, and Stefan Schaal. An iterative path integral stochastic optimal control approach for learning robotic tasks. In *18th World Congress of the International Federation of Automatic Control*, 2011.
- 2011 Freek Stulp, Evangelos Theodorou, Jonas Buchli, and Stefan Schaal. Learning to grasp under uncertainty. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, 2011.
- 2010 Freek Stulp, Jonas Buchli, Evangelos Theodorou, and Stefan Schaal. Reinforcement learning of full-body humanoid motor skills. In *10th IEEE-RAS International Conference on Humanoid Robots*, 2010. **Best paper finalist.**

- 2010** Jonas Buchli, Evangelos Theodorou, Freek Stulp, and Stefan Schaal. Variable impedance control - a reinforcement learning approach. In *Robotics: Science and Systems Conference (RSS)*, 2010.
- 2009** Freek Stulp, Erhan Oztop, Peter Pastor, Michael Beetz, and Stefan Schaal. Compact models of motor primitive variations for predictable reaching and obstacle avoidance. In *9th IEEE-RAS International Conference on Humanoid Robots*, 2009.
- 2009** Freek Stulp, Andreas Fedrizzi, Franziska Zacharias, Moritz Tenorth, Jan Bandouch, and Michael Beetz. Combining analysis, imitation, and experience-based learning to acquire a concept of reachability. In *9th IEEE-RAS International Conference on Humanoid Robots*, 2009.
- 2009** Freek Stulp, Andreas Fedrizzi, and Michael Beetz. Action-related place-based mobile manipulation. In *International Conference on Intelligent Robots and Systems (IROS)*, 2009.
- 2009** Freek Stulp, Andreas Fedrizzi, and Michael Beetz. Learning and performing place-based mobile manipulation. In *Proceedings of the 8th International Conference on Development and Learning (ICDL)*, 2009.
- 2009** Freek Stulp, Ingo Kresse, Alexis Maldonado, Federico Ruiz, Andreas Fedrizzi, and Michael Beetz. Compact models of human reaching motions for robotic control in everyday manipulation tasks. In *Proceedings of the 8th International Conference on Development and Learning (ICDL)*, 2009.
- 2009** Andreas Fedrizzi, Lorenz Moesenlechner, Freek Stulp, and Michael Beetz. Transformational planning for mobile manipulation based on action-related places. In *International Conference on Advanced Robotics (ICAR)*, 2009.
- 2008** Michael Beetz, Freek Stulp, Bernd Radig, Jan Bandouch, Nico Blodow, Mihai Dolha, Andreas Fedrizzi, Dominik Jain, Uli Klank, Ingo Kresse, Alexis Maldonado, Zoltan Marton, Lorenz Mosenlechner, Federico Ruiz, Radu Bogdan Rusu, and Moritz Tenorth. The assistive kitchen — a demonstration scenario for cognitive technical systems. In *The 17th International Symposium on Robot and Human Interactive Communication (ROMAN)*, 2008. Invited paper.
- 2008** Freek Stulp, Alexis Maldonado, and Michael Beetz. Learning predictive knowledge to optimize robot motor control. In *International Conference on Cognitive Systems (CogSys)*, 2008.
- 2008** Christoph Mayer, Matthias Wimmer, Freek Stulp, Zahid Riaz, Anton Roth, Martin Eggers, and Bernd Radig. A real time system for model-based interpretation of the dynamics of facial expressions. In *Proceedings of the International Conference on Automatic Face and Gesture Recognition (FG)*, 2008.
- 2008** Matthias Wimmer, Shinya Fujie, Freek Stulp, Tetsunori Kobayashi, and Bernd Radig. An asm fitting method based on machine learning that provides a robust parameter initialization for aam fitting. In *Proceedings of the International Conference on Automatic Face and Gesture Recognition (FG)*, 2008.
- 2008** Sylvia Pietzsch, Matthias Wimmer, Freek Stulp, and Bernd Radig. Face model fitting with generic, group-specific, and person-specific objective functions. In *3rd International Conference on Computer Vision Theory and Applications (VISAPP)*, January 2008.
- 2007** Freek Stulp, Wolfram Koska, Alexis Maldonado, and Michael Beetz. Seamless execution of action sequences. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, 2007.
- 2007** Matthias Wimmer, Sylvia Pietzsch, Freek Stulp, and Bernd Radig. Learning robust objective functions with application to face model fitting. In *Proceedings of the 29th Annual Symposium of the German Association for Pattern Recognition (DAGM)*, 2007.
- 2007** Matthias Wimmer, Freek Stulp, and Bernd Radig. Enabling users to guide the design of robust model fitting algorithms. In *Proceedings of the Eleventh IEEE International Conference on Computer Vision (ICCV)*, 2007.
- 2006** Freek Stulp, Michael Isik, and Michael Beetz. Implicit coordination in robotic teams using learned prediction models. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, 2006.
- 2006** Freek Stulp and Michael Beetz. Action awareness – enabling agents to optimize, transform, and coordinate plans. In *Proceedings of the Fifth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2006.
- 2006** Freek Stulp, Mark Pflüger, and Michael Beetz. Feature space generation using equation discovery. In *Proceedings of the 29th German Conference on Artificial Intelligence (KI)*, 2006.
- 2006** Michael Isik, Freek Stulp, Gerd Mayer, and Hans Utz. Coordination without negotiation in teams of heterogeneous robots. In *Proceedings of RoboCup International Symposium*, 2006.
- 2006** Matthias Wimmer, Freek Stulp, Stephan Tschechne, and Bernd Radig. Learning robust objective functions for model fitting in image understanding applications. In Michael J. Chantler, Emanuel Trucco, and Robert B. Fisher, editors, *Proceedings of the British Machine Vision Conference (BMVC 2006)*, volume 3, pages 1159 – 1168. BMVA, September 2006.

- 2005** Freek Stulp and Michael Beetz. Optimized execution of action chains using learned performance models of abstract actions. In *Proceedings of the 19th International Joint Conference on Artificial Intelligence (IJCAI 2005)*, 2005.
- 2004** Hans Utz, Freek Stulp, and Arndt Mühlenfeld. Sharing belief in teams of heterogeneous robots. In Daniele Nardi, Martin Riedmiller, and Claude Sammut, editors, *RoboCup-2004: The Eighth RoboCup Competitions and Conferences*. Springer Verlag, 2004.
- 2004** Freek Stulp, Alexandra Kirsch, Suat Gedikli, and Michael Beetz. AGILO RoboCuppers 2004. In *RoboCup International Symposium 2004*, Lisbon, July 2004.
- 2003** Michael Beetz, Freek Stulp, Alexandra Kirsch, Armin Müller, and Sebastian Buck. Autonomous robot controllers capable of acquiring repertoires of complex skills. In Daniel Polani, Andrea Bonarini, Brett Browning, and Kazuo Yoshida, editors, *RoboCup-2003: The Seventh RoboCup Competitions and Conferences*. Springer Verlag, 2003.
- 2003** Michael Beetz, Suat Gedikli, Robert Hanek, Thorsten Schmitt, and Freek Stulp. AGILO robocuppers 2003: Computational principles and research directions. In *RoboCup International Symposium 2003*, Padova, July 2003.
- 2002** Sebastian Buck, Freek Stulp, Michael Beetz, and Thorsten Schmitt. Machine control using radial basis value functions and inverse state projection. In *Proceedings of the IEEE Intl. Conference on Automation, Robotics, Control, and Vision, 2002, Singapore*, 2002.
- 2001** Freek Stulp, Fabio Dell'Acqua, and Robert Fisher. Reconstruction of surfaces behind occlusions in range images. In *Proceedings of the 3rd International Conference on 3D Digital Imaging and Modeling (3DIM01)*, pages 232–239. IEEE Computer Society, 2001.
- 2000** Freek Stulp and Rineke Verbrugge. A knowledge-based algorithm for the internet transmission control protocol (TCP). In G. Bonanno and W. van der Hoek, editors, *Proceedings 4th Conference on Logic and the Foundations of Game and Decision Theory (LOFT4)*, 2000.