


Prof. Michael Beetz

List of Publications

[J1] Jan Bandouch, Odest Chadwicke Jenkins and Michael Beetz,
A Self-Training Approach for Visual Tracking and Recognition of Complex Human Activity Patterns,

[J2] Michael Beetz, Dominik Jain, Lorenz Mösenlechner, Moritz Tenorth, Lars Kunze, Nico Blodow and Dejan Pangercic,
Cognition-Enabled Autonomous Robot Control for the Realization of Home Chore Task Intelligence,
*Proceedings of the IEEE, Special Issue on Quality of Life Technology*, 100(8): 2454-2471, 2012.

[J3] Freek Stulp, Andreas Fedrizzi, Lorenz Mösenlechner and Michael Beetz,
Learning and Reasoning with Action-Related Places for Robust Mobile Manipulation,

[J4] Zoltan-Csaba Marton, Florian Seidel, Ferenc Balint-Benczedi and Michael Beetz,
Ensembles of Strong Learners for Multi-cue Classification,
*Pattern Recognition Letters (PRL), Special Issue on Scene Understandings and Behaviours Analysis*, 2012.

[C1] Julius Kammerl AND Nico Blodow AND Radu Bogdan Rusu AND Suat Gedikli AND Michael Beetz AND Eckehard Steinbach,
Real-time Compression of Point Cloud Streams,

[C2] Karol Hausman, Christian Bersch, Dejan Pangercic, Sarah Osentoski, Zoltan-Csaba Marton and Michael Beetz,
Segmentation of Cluttered Scenes through Interactive Perception,

[C3] Ross Kidson, Darko Stanimirovic, Dejan Pangercic and Michael Beetz,
Elaborative Evaluation of RGB-D based Point Cloud Registration for Personal Robots,

[C4] Martin Schuster, Dominik Jain, Moritz Tenorth and Michael Beetz,
Learning Organizational Principles in Human Environments,

[C5] Thomas Rühr, Jürgen Sturm, Dejan Pangercic, Michael Beetz and Daniel Cremers,
A Generalized Framework for Opening Doors and Drawers in Kitchen Environments,
[C6] Moritz Tenorth, Alexander Clifford Perzylo, Reinhard Lafrenz and Michael Beetz, 
The RoboEarth language: Representing and Exchanging Knowledge about Actions, Objects, and Environments, 

[C7] Lars Kunze, Michael Beetz, Manabu Saito, Haseru Azuma, Kei Okada and Masayuki Inaba, 
Searching Objects in Large-scale Indoor Environments: A Decision-theoretic Approach, 

[C8] Ulrich Klank, Lorenz Mösenlechner, Alexis Maldonado and Michael Beetz, 
Robots that Validate Learned Perceptual Models, 

[C9] Ingo Kresse and Michael Beetz, 
Movement-aware Action Control – Integrating Symbolic and Control-theoretic Action Execution, 

[C10] Moritz Tenorth and Michael Beetz, 
Knowledge Processing for Autonomous Robot Control, 

[C11] Michael Beetz, Moritz Tenorth, Dejan Panceric and Benjamin Pitzer, 
Semantic Object Maps for Household Tasks, 

[C12] Michael Beetz, Lorenz Mösenlechner, Moritz Tenorth and Thomas Rühr, 
CRAM – a Cognitive Robot Abstract Machine, 

[C13] Ferenc Balint-Benczedi, Zoltan-Csaba Marton and Michael Beetz, 
Efficient Part-Graph Hashes for Object Categorization, 
5th International Conference on Cognitive Systems (CogSys), 2012.

[C14] Moritz Tenorth and Michael Beetz, 
Exchange of Action-related Information among Autonomous Robots, 

[C15] Zoltan-Csaba Marton, Ferenc Balint-Benczedi, Florian Seidel, Lucian Cosmin Goron and Michael Beetz, 
Object Categorization in Clutter using Additive Features and Hashing of Part-graph Descriptors, 
*Proceedings of Spatial Cognition (SC)*, Abbey Kloster Seeon, Germany, 2012.

[C16] David Gossow, David Weikersdorfer and Michael Beetz, 
Distinctive Texture Features from Perspective-Invariant Keypoints, 


[C20] Daniel Nyga and Michael Beetz, Everything Robots Always Wanted to Know about Housework (But were afraid to ask), 2012 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vilamoura, Portugal, October, 7–12 2012.


[C23] Lucian Cosmin Goron, Zoltan Csaba Marton, Gheorghe Lazea and Michael Beetz, Segmenting Cylindrical and Box-like Objects in Cluttered 3D Scenes, 7th German Conference on Robotics (ROBOTIK), Munich, Germany, May 2012.

[C24] Zoltan-Csaba Marton, Florian Seidel and Michael Beetz, Towards Modular Spatio-temporal Perception for Task-adapting Robots, Postgraduate Conference on Robotics and Development of Cognition (RobotDoC-PhD), a satellite event of the 22nd International Conference on Artificial Neural Networks (ICANN), Lausanne, Switzerland, 2012.

[C26] Lars Kunze, Andrei Haidu and Michael Beetz,
Making Virtual Pancakes — Acquiring and Analyzing Data of Everyday Manipulation Tasks through Interactive Physics-based Simulations,
Poster and Demo Track of the 35th German Conference on Artificial Intelligence (KI-2012), Saarbrücken, Germany, September 24–27 2012.

The SHERPA project: smart collaboration between humans and ground-aerial robots for improving rescuing activities in alpine environments,
IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR), College Station, Texas, USA, Nov. 5-8 2012.

[C28] Vladyslav Usenko, Florian Seidel, Zoltan-Csaba Marton and Dejan Pangercic Michael Beetz,
Furniture Classification using WWW CAD Models,
IROS12 Workshop on Active Semantic Perception (ASP12), Vilamoura, Portugal, October 7 2012.

[J1] S´everin Lemaignan, Raquel Ros, E. Akin Sisbot, Rachid Alami and Michael Beetz,
Grounding the Interaction: Anchoring Situated Discourse in Everyday Human-Robot Interaction,

[J2] Moritz Tenorth, Ulrich Klank, Dejan Pangercic and Michael Beetz,
Web-enabled Robots — Robots that Use the Web as an Information Resource,

[J3] Markus Waibel, Michael Beetz, Raffaello D’Andrea, Rob Janssen, Moritz Tenorth, Javier Civera, Jos Elfring, Dorian Gálvez-López, Kai Häussermann, J.M.M. Montiel, Alexander Perzylo, Björn Schießle, Oliver Zweigle and René van de Molengraft,
RoboEarth - A World Wide Web for Robots,

[J4] Oscar Martinez Mozos, Zoltan Csaba Marton and Michael Beetz,
Furniture Models Learned from the WWW – Using Web Catalogs to Locate and Categorize Unknown Furniture Pieces in 3D Laser Scans,

[J5] Zoltan Csaba Marton, Dejan Pangercic, Nico Blodow and Michael Beetz,
Combined 2D-3D Categorization and Classification for Multimodal Perception Systems,

[C1] Federico Ruiz-Ugalde, Gordon Cheng and Michael Beetz,
Fast adaptation for effect-aware pushing,
Prof. Michael Beetz  
List of Publications

[C2] Sebastian Albrecht, Karinne Ramirez-Amaro, Federico Ruiz-Ugalde, David Weikersdorfer, Marion Leibold, Michael Ulbrich and Michael Beetz,  
Imitating human reaching motions using physically inspired optimization principles,  

[C3] Lars Kunze, Mihai Emanuel Dolha, Emitza Guzman and Michael Beetz,  
Simulation-based Temporal Projection of Everyday Robot Object Manipulation,  
Yolum, Tumer, Stone and Sonenberg(Eds.), Proc. of the 10th Int. Conf. on Autonomous Agents and Multiagent Systems (AAMAS 2011), Taipei, Taiwan, IFAAMAS, May, 2–6 2011.

[C4] Lars Kunze, Tobias Roehm and Michael Beetz,  
Towards Semantic Robot Description Languages,  

[C5] Daniel Nyga, Moritz Tenorth and Michael Beetz,  
How-Models of Human Reaching Movements in the Context of Everyday Manipulation Activities,  

[C6] Ulrich Klank, Daniel Carton and Michael Beetz,  
Transparent Object Detection and Reconstruction on a Mobile Platform,  

[C7] Michael Beetz, Ulrich Klank, Alexis Maldonado, Dejan Panceric and Thomas Rühr,  
Robotic Roommates Making Pancakes - Look Into Perception-Manipulation Loop,  

[C8] Nico Blodow, Zoltan-Csaba Marton, Dejan Panceric, Thomas Rühr, Moritz Tenorth and Michael Beetz,  
Inferring Generalized Pick-and-Place Tasks from Pointing Gestures,  

[C9] Nico Blodow, Lucian Cosmin Goron, Zoltan-Csaba Marton, Dejan Panceric, Thomas Rühr, Moritz Tenorth and Michael Beetz,  
Autonomous Semantic Mapping for Robots Performing Everyday Manipulation Tasks in Kitchen Environments,  

[C10] Lars Kunze, Mihai Emanuel Dolha and Michael Beetz,  
Logic Programming with Simulation-based Temporal Projection for Everyday Robot Object Manipulation,  
[C11] Zoltan-Csaba Marton, Nico Blodow and Michael Beetz,
Advantages of Spatial-temporal Object Maps for Service Robotics,
*IEEE Workshop on Advanced Robotics and its Social Impacts (ARSO)*, Half-Moon Bay, CA, USA, October 2-4 2011.

[C12] Dominik Jain, Klaus von Gleissenthall and Michael Beetz,
Bayesian Logic Networks and the Search for Samples with Backward Simulation and Abstract Constraint Learning,

[C13] Lorenz Mösenlechner and Michael Beetz,
Parameterizing Actions to have the Appropriate Effects,

[C14] Shulei Zhu, Dejan Pangercic and Michael Beetz,
Contracting Curve Density Algorithm for Applications in Personal Robotics,

[C15] Michael Beetz, Ulrich Klank, Ingo Kresse, Alexis Maldonado, Lorenz Mösenlechner, Dejan Pangercic, Thomas Rühr and Moritz Tenorth,
Robotic Roommates Making Pancakes,

[C16] Ingo Kresse, Ulrich Klank and Michael Beetz,
Multimodal Autonomous Tool Analyses and Appropriate Application,

[C17] Manabu Saito, Haseru Chen, Kei Okada, Masayuki Inaba, Lars Kunze and Michael Beetz,
Semantic Object Search in Large-scale Indoor Environments,

[C18] Dejan Pangercic, Vladimir Haltakov and Michael Beetz,
Fast and Robust Object Detection in Household Environments Using Vocabulary Trees with SIFT Descriptors,

[C19] Asako Kanezaki, Zoltan-Csaba Marton, Dejan Pangercic, Tatsuya Harada, Yasuo Kuniyoshi and Michael Beetz,
Voxelized Shape and Color Histograms for RGB-D,
[C20] Zoltan-Csaba Marton, Dejan Pangercic and Michael Beetz, 
Efficient Surface and Feature Estimation in RGBD, 

[J1] Michael Beetz, Freek Stulp, Piotr Esden-Tempski, Andreas Fedrizzi, Ulrich Klank, Ingo Kresse, Alexis Maldonado and Federico Ruiz, 
Generality and Legibility in Mobile Manipulation, 

[J2] Wykowska, Agnieszka, Maldonado, Alexis, Beetz, Michael, Schuboe and Anna, 
How Humans Optimize Their Interaction with the Environment: The Impact of Action Context on Human Perception, 

[J3] Michael Beetz, Moritz Tenorth, Dominik Jain and Jan Bandouch, 
Towards Automated Models of Activities of Daily Life, 

[J4] Michael Beetz, Dominik Jain, Lorenz Mösenlechner and Moritz Tenorth, 
Towards Performing Everyday Manipulation Activities, 

[J5] Michael Beetz, Martin Buss and Bernd Radig, 
Learning from Humans – Cognition-enabled Computational Models of Everyday Activity, 

[J6] Martin Buss and Michael Beetz, 
CoTeSys – Cognition for Technical Systems, 

[J7] Moritz Tenorth, Dominik Jain and Michael Beetz, 
Knowledge Representation for Cognitive Robots, 

[J8] Michael Beetz and Alexandra Kirsch, 
Special Issue on Cognition for Technical Systems, 

Artificial Cognition in Production Systems, 
[BC1] Nicolai v. Hoyningen-Huene and Michael Beetz, 
Importance Sampling as One Solution to the Data Association Problem in Multi-target Tracking, 

[C1] Moritz Tenorth, Daniel Nyga and Michael Beetz, 
Understanding and Executing Instructions for Everyday Manipulation Tasks from the World Wide Web, 

[C2] Moritz Tenorth and Michael Beetz, 
Priming Transformational Planning with Observations of Human Activities, 

[C3] Dominik Jain, Andreas Barthels and Michael Beetz, 
Adaptive Markov Logic Networks: Learning Statistical Relational Models with Dynamic Parameters, 

[C4] Dominik Jain and Michael Beetz, 
Soft Evidential Update via Markov Chain Monte Carlo Inference, 

[C5] Nico Blodow, Zoltan-Csaba Marton, Dejan Pangercic and Michael Beetz, 
Making Sense of 3D Data, 

[C6] Zoltan-Csaba Marton, Dejan Pangercic, Nico Blodow, Jonathan Kleinehellefort and Michael Beetz, 
General 3D Modelling of Novel Objects from a Single View, 

[C7] Dejan Pangercic, Moritz Tenorth, Dominik Jain and Michael Beetz, 
Combining Perception and Knowledge Processing for Everyday Manipulation, 

[C8] Michael Beetz, Lorenz Mösenlechner and Moritz Tenorth, 
CRAM – A Cognitive Robot Abstract Machine for Everyday Manipulation in Human Environments, 


Prof. Michael Beetz

List of Publications


[R2] Moritz Tenorth and Michael Beetz,


[J1] Radu Bogdan Rusu, Aravind Sundaresan, Benoit Morisset, Kris Hauser, Motilal Agrawal, Jean-Claude Latombe and Michael Beetz,


[J2] Michael Beetz, Nicolai von Hoyningen-Huene, Bernhard Kirchlechner, Suat Gedikli, Francisco Siles, Murat Durus and Martin Lames,


[J3] Radu Bogdan Rusu, Jan Bandouch, Franziska Meier, Irfan Essa and Michael Beetz,


[BC1] Wykowska, Agnieszka, Maldonado, Alexis, Beetz, Michael, Schuboe and Anna,


[C1] Freek Stulp, Erhan Oztop, Peter Pastor, Michael Beetz and Stefan Schaal,

[C2] 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,

[C3] Ulrich Klank, Dejan Pangercic, Radu Bogdan Rusu and Michael Beetz,
Real-time CAD Model Matching for Mobile Manipulation and Grasping,

[C4] Zoltan Csaba Marton, Radu Bogdan Rusu, Dominik Jain, Ulrich Klank and Michael Beetz,
Probabilistic Categorization of Kitchen Objects in Table Settings with a Composite Sensor,

[C5] Radu Bogdan Rusu, Ioan Alexandru Sucan, Brian Gerkey, Sachin Chitta, Michael Beetz and Lydia E. Kavraki,
Real-time Perception-Guided Motion Planning for a Personal Robot,

[C6] Radu Bogdan Rusu, Zoltan Csaba Marton, Nico Blodow, Andreas Holzbach and Michael Beetz,
Model-based and Learned Semantic Object Labeling in 3D Point Cloud Maps of Kitchen Environments,

[C7] Radu Bogdan Rusu, Nico Blodow, Zoltan Csaba Marton and Michael Beetz,
Close-range Scene Segmentation and Reconstruction of 3D Point Cloud Maps for Mobile Manipulation in Human Environments,

[C8] Radu Bogdan Rusu, Andreas Holzbach, Nico Blodow and Michael Beetz,
Fast Geometric Point Labeling using Conditional Random Fields,

[C9] Christoph Ertelt, Thomas Rühr, Dejan Pangercic, Kristina Shea and Michael Beetz,
Integration of Perception, Global Planning and Local Planning in the Manufacturing Domain,

[C10] Freek Stulp, Andreas Fedrizzi and Michael Beetz,
Action-Related Place-Based Mobile Manipulation,

[C11] Florian Friesdorf, Dejan Pangercic, Heiner Bubb and Michael Beetz,
Mutually Augmented Cognition,
Proceedings of the International Conference on Social Robotics (ICSR), 2009.
[C12] Radu Bogdan Rusu, Wim Meeussen, Sachin Chitta and Michael Beetz,  
Laser-based Perception for Door and Handle Identification,  

[C13] Dejan Pangercic, Rok Tavcar, Moritz Tenorth and Michael Beetz,  
Visual Scene Detection and Interpretation using Encyclopedic Knowledge and Formal Description Logic,  
Proceedings of the International Conference on Advanced Robotics (ICAR)., Munich, Germany, June 22 - 26 2009.

[C14] Andreas Fedrizzi, Lorenz Moesenlechner, Freek Stulp and Michael Beetz,  
Transformational Planning for Mobile Manipulation based on Action-related Places,  

[C15] Freek Stulp, Andreas Fedrizzi and Michael Beetz,  
Learning and Performing Place-based Mobile Manipulation,  

[C16] 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,  
Proceedings of the 8th International Conference on Development and Learning (ICDL)., 2009.

[C17] Benoit Morisset, Radu Bogdan Rusu, Aravind Sundaresan, Kris Hauser, Motilal Agrawal, Jean-Claude Latombe and Michael Beetz,  
Leaving Flatland: Toward Real-Time 3D Navigation,  

[C18] Radu Bogdan Rusu, Nico Blodow and Michael Beetz,  
Fast Point Feature Histograms (FPFH) for 3D Registration,  

[C19] Zoltan Csaba Marton, Radu Bogdan Rusu and Michael Beetz,  
On Fast Surface Reconstruction Methods for Large and Noisy Point Clouds,  

[C20] Morten Rufus Blas, Radu Bogdan Rusu, Mogens Blanke and Michael Beetz,  
Fault-tolerant 3D Mapping with Application to an Orchard Robot,  
Proceedings of the 7th IFAC International Symposium on Fault Detection, Supervision and Safety of Technical Processes (SAFEPROCESS’09), Barcelona, Spain, June 30 - July 3, 2009.

[C21] Ulrich Klank, Muhammad Zeeshan Zia and Michael Beetz,  
3D Model Selection from an Internet Database for Robotic Vision,  
[C22] Dominik Jain, Lorenz Mösenlechner and Michael Beetz, 
Equipping Robot Control Programs with First-Order Probabilistic Reasoning Capabilities, 

[C23] Nicolai von Hoyningen-Huene and Michael Beetz, 
Rao-Blackwellized Resampling Particle Filter for Real-Time Player Tracking in Sports, 

[C24] Andreas Andreakis, Nicolai von Hoyningen-Huene and Michael Beetz, 
Incremental Unsupervised Time Series Analysis Using Merge Growing Neural Gas, 

[C25] Nicolai von Hoyningen-Huene and Michael Beetz, 
Robust real-time multiple target tracking, 
*Ninth Asian Conference on Computer Vision (ACCV)*, Xi’an, China, Sep. 2009.

[C26] Moritz Tenorth and Michael Beetz, 
KnowRob – Knowledge Processing for Autonomous Personal Robots, 

[C27] Muhammad Zeeshan Zia, Ulrich Klank and Michael Beetz, 
Acquisition of a Dense 3D Model Database for Robotic Vision, 
*International Conference on Advanced Robotics (ICAR)*, 2009.

[C28] Lorenz Mösenlechner and Michael Beetz, 
Using Physics- and Sensor-based Simulation for High-fidelity Temporal Projection of Realistic Robot Behavior, 
*19th International Conference on Automated Planning and Scheduling (ICAPS’09)*, 2009.

[C29] Jan Bandouch and Michael Beetz, 
Tracking Humans Interacting with the Environment Using Efficient Hierarchical Sampling and Layered Observation Models, 

[C30] Moritz Tenorth, Jan Bandouch and Michael Beetz, 
The TUM Kitchen Data Set of Everyday Manipulation Activities for Motion Tracking and Action Recognition, 

[C31] Michael Beetz, Jan Bandouch, Dominik Jain and Moritz Tenorth, 
Towards Automated Models of Activities of Daily Life, 
[C32] Andreas Leha, Dejan Pangercic, Thomas Rühr and Michael Beetz, 
Optimization of Simulated Production Process Performance using Machine 
Learning, 

[C33] Li Sun, Ulrich Klang and Michael Beetz, 
EYEWATCHME - 3D Hand and object tracking for inside out activity analysis, 

[C34] Zoltan Csaba Marton, Lucian Cosmin Goron, Radu Bogdan Rusu and Michael Beetz, 
Reconstruction and Verification of 3D Object Models for Grasping, 
Proceedings of the 14th International Symposium on Robotics Research (ISRR09) 
Lucerne, Switzerland, August 31 – September 3 2009.

[C35] Radu Bogdan Rusu, Andreas Holzbach, Gary Bradski and Michael Beetz, 
Detecting and Segmenting Objects for Mobile Manipulation, 
Proceedings of IEEE Workshop on Search in 3D and Video (S3DV), held in conjunction 
with the 12th IEEE International Conference on Computer Vision (ICCV), Kyoto, Japan, 
September 27 2009.

[C36] Nico Blodow, Radu Bogdan Rusu, Zoltan Csaba Marton and Michael Beetz, 
Partial View Modeling and Validation in 3D Laser Scans for Grasping, 
9th IEEE-RAS International Conference on Humanoid Robots (Humanoids), Paris, France, 
December 7-10 2009.

[C37] Radu Bogdan Rusu, Andreas Holzbach, Rosen Diankov, Gary Bradski and Michael Beetz, 
Perception for Mobile Manipulation and Grasping using Active Stereo, 
9th IEEE-RAS International Conference on Humanoid Robots (Humanoids), Paris, France, 
December 7-10 2009.

[C38] Michael Beetz, Nico Blodow, Ulrich Klang, Zoltan Csaba Marton, Dejan Pangercic and 
Radu Bogdan Rusu, 
CoP-Man – Perception for Mobile Pick-and-Place in Human Living Environments, 
Proceedings of the 22nd IEEE/RSJ International Conference on Intelligent Robots and 
Systems (IROS) Workshop on Semantic Perception for Mobile Manipulation, St. Louis, 
MO, USA, October 11-15 2009.

[C39] Jun Li, Alexis Maldonado, Michael Beetz and Anna Schuboe, 
Obstacle avoidance in a pick-and-place task, 
Proceedings of the 2009 IEEE Conference on Robotics and Biomimetics, Guilin, Guangxi, 
China, December 19-23 2009.

[C40] Agnieszka Wykowska, Alexis Maldonado, Michael Beetz and Anna Schuboe, 
How humans optimize their interaction with the environment: The impact of action context on human perception., 
Progress in Robotics. Proceedings of the FIRA RoboWorld Congress, Incheon, Korea, 
August 16-20 2009.

[C41] Zahid Riaz, Christoph Mayer, Matthias Wimmer, Michael Beetz and Bernd Radig, 
A Model Based approach for Expression Invariant Face Recognition, 
[C42] Zahid Riaz, Christoph Mayer, Michael Beetz and Bernd Radig, 
Facial Expressions Recognition from Image Sequences, 
2nd International Conference on Cross-Modal Analysis of Speech, Gestures, Gaze and 

[C43] Zahid Riaz, Christoph Mayer, Michael Beetz and Bernd Radig, 
Model Based Analysis of Face Images for Facial Feature Extraction, 

[C44] Zahid Riaz, Michael Beetz and Bernd Radig, 
Image Normalization for Face Recognition using 3D Model, 
International Conference of Information and Communication Technologies, Karachi, Pak- 

[C45] Zahid Riaz, Christoph Mayer, Michael Beetz and Bernd Radig, 
3D Model for Face Recognition across Facial Expressions, 

[C46] Zahid Riaz, Suat Gedikli, Michael Beetz and Bernd Radig, 
A Unified Features Approach to Human Face Image Analysis and Interpretation, 

[C47] Zahid Riaz, Christoph Mayer, Saquib Sarfraz, Michael Beetz and Bernd Radig, 
Multi-Feature Fusion in Advanced Robotics Applications, 

[R1] Moritz Tenorth, Daniel Nyga and Michael Beetz, 
Understanding and Executing Instructions for Everyday Manipulation Tasks from the World Wide Web, 
IAS group, Technische Universität München, Fakultät für Informatik, 2009.

[R2] Dominik Jain, Stefan Waldherr and Michael Beetz, 
Bayesian Logic Networks, 
IAS Group, Fakultät für Informatik, Technische Universität München, 2009.

[J1] Radu Bogdan Rusu, Zoltan Csaba Marton, Nico Blodow, Mihai Dolha and Michael Beetz, 
Towards 3D Point Cloud Based Object Maps for Household Environments, 
Robotics and Autonomous Systems Journal (Special Issue on Semantic Knowledge in Ro-

[J2] Freek Stulp and Michael Beetz, 
Refining the execution of abstract actions with learned action models, 
Journal of Artificial Intelligence Research (JAIR), 32: June 2008.

[J3] Freek Stulp and Michael Beetz, 
Combining Declarative, Procedural and Predictive Knowledge to Generate and Execute Robot Plans Efficiently and Robustly, 
Prof. Michael Beetz

List of Publications

[J4] Radu Bogdan Rusu, Brian Gerkey and Michael Beetz,
Robots in the kitchen: Exploiting ubiquitous sensing and actuation,
Robotics and Autonomous Systems Journal (Special Issue on Network Robot Systems),
2008.

[C1] Zoltan Csaba Marton, Nico Blodow, Mihai Dolha, Moritz Tenorth, Radu Bogdan Rusu
and Michael Beetz,
Autonomous Mapping of Kitchen Environments and Applications,

[C2] Radu Bogdan Rusu, Aravind Sundaresan, Benoit Morisset, Motilal Agrawal, Michael Beetz
and Kurt Konolige,
Realtime Extended 3D Reconstruction from Stereo for Navigation,

[C3] Radu Bogdan Rusu, Zoltan Csaba Marton, Nico Blodow and Michael Beetz,
Interpretation of Urban Scenes based on Geometric Features,

[C4] Radu Bogdan Rusu, Aravind Sundaresan, Benoit Morisset, Motilal Agrawal and Michael
Beetz,
Leaving Flatland: Realtime 3D Stereo Semantic Reconstruction,

[C5] Radu Bogdan Rusu, Zoltan Csaba Marton, Nico Blodow and Michael Beetz,
Learning Informative Point Classes for the Acquisition of Object Model Maps,

The Assistive Kitchen – A Demonstration Scenario for Cognitive Technical Systems,
IEEE 17th International Symposium on Robot and Human Interactive Communication (RO-MAN), Muenchen, Germany, 1-8, 2008.

[C7] Anna Schubö, Alexis Maldonado, Sonja Stork and Michael Beetz,
Subsequent Actions Influence Motor Control Parameters of a Current Grasping Action,
IEEE 17th International Symposium on Robot and Human Interactive Communication (RO-MAN), Muenchen, Germany, 2008.

[C8] Freek Stulp and Michael Beetz,
Learning Predictive Knowledge to Optimize Robot Motor Control,
[C9] Jan Bandouch, Florian Engstler and Michael Beetz, 
Evaluation of Hierarchical Sampling Strategies in 3D Human Pose Estimation, 

[C10] Jan Bandouch, Florian Engstler and Michael Beetz, 
Accurate Human Motion Capture Using an Ergonomics-Based Anthropometric Human Model, 
Proceedings of the Fifth International Conference on Articulated Motion and Deformable Objects (AMDO), 2008.

[C11] Radu Bogdan Rusu, Jan Bandouch, Zoltan Csaba Marton, Nico Blodow and Michael Beetz, 
Action Recognition in Intelligent Environments using Point Cloud Features Extracted from Silhouette Sequences, 
IEEE 17th International Symposium on Robot and Human Interactive Communication (RO-MAN), Muenchen, Germany, 2008.

[C12] Radu Bogdan Rusu, Zoltan Csaba Marton, Nico Blodow and Michael Beetz, 
Persistent Point Feature Histograms for 3D Point Clouds, 

[C13] Radu Bogdan Rusu, Zoltan Csaba Marton, Nico Blodow, Mihai Emanuel Dolha and Michael Beetz, 
Functional Object Mapping of Kitchen Environments, 

[C14] Radu Bogdan Rusu, Nico Blodow, Zoltan Csaba Marton and Michael Beetz, 
Aligning Point Cloud Views using Persistent Feature Histograms, 

[C15] Thomas Rühr, Dejan Pangercic and Michael Beetz, 
Structured Reactive Controllers and Transformational Planning for Manufacturing, 

[C16] Dejan Pangercic, Radu Bogdan Rusu and Michael Beetz, 
3D-Based Monocular SLAM for Mobile Agents Navigating in Indoor Environments, 

An Integrated Approach to Realize the Cognitive Machine Shop, 
[C18] Moritz Tenorth and Michael Beetz, 
Towards Practical and Grounded Knowledge Representation Systems for Autonomous Household Robots, 

[C19] Dominik Jain, Lorenz Mösenlechner and Michael Beetz, 
Equipping Robot Control Programs with First-Order Probabilistic Reasoning Capabilities, 

[C20] Lorenz Mösenlechner, Armin Müller and Michael Beetz, 
High Performance Execution of Everyday Pick-and-Place Tasks by Integrating Transformation Planning and Reactive Execution, 

[C21] Zahid Riaz, Michael Beetz and Bernd Radig, 
Shape Invariant Recognition of Segmented Human Faces using Eigenfaces, 

[J1] Martin Buss, Michael Beetz and Dirk Wollherr, 
CoTeSys — Cognition for Technical Systems, 

[C1] Nicolai v. Hoyningen-Huene, Bernhard Kirchlechner and Michael Beetz, 
GrAM: Reasoning with Grounded Action Models by Combining Knowledge Representation and Data Mining, 

[C2] Freek Stulp, Wolfram Koska, Alexis Maldonado and Michael Beetz, 
Seamless Execution of Action Sequences, 

[C3] Michael Beetz, Suat Gedikli, Jan Bandouch, Bernhard Kirchlechner, Nico von Hoyningen-Huene and Alexander Perzylo, 
Visually Tracking Football Games Based on TV Broadcasts, 
Proceedings of the Twentieth International Joint Conference on Artificial Intelligence (IJCAI), 2007.

[C4] Suat Gedikli, Jan Bandouch, Nico von Hoyningen-Huene, Bernhard Kirchlechner and Michael Beetz, 
An Adaptive Vision System for Tracking Soccer Players from Variable Camera Settings, 
[C5] Matthias Kranz, Alexis Maldonado, Benedikt Hoernler, Radu Bogdan Rusu, Michael Beetz, Gerhard Rigoll and Albrecht Schmidt,
A Knife and a Cutting Board as Implicit User Interface - Towards Context-Aware Kitchen Utilities,

[C6] Matthias Kranz, Alexis Maldonado, Radu Bogdan Rusu, Benedikt Hoernler, Gerhard Rigoll, Michael Beetz and Albrecht Schmidt,
Sensing Technologies and the Player-Middleware for Context-Awareness in Kitchen Environments,

[C7] Radu Bogdan Rusu, Alexis Maldonado, Michael Beetz and Brian Gerkey,
Extending Player/Stage/Gazebo towards Cognitive Robots Acting in Ubiquitous Sensor-equipped Environments,

[C8] Martin Buss, Michael Beetz and Dirk Wollherr,
CoTeSys — Cognition for Technical Systems,

[C9] Michael Beetz, Jan Bandouch, Alexandra Kirsch, Alexis Maldonado, Armin Müller and Radu Bogdan Rusu,
The Assistive Kitchen — A Demonstration Scenario for Cognitive Technical Systems,

[C10] Alexandra Kirsch and Michael Beetz,
Training on the Job — Collecting Experience with Hierarchical Hybrid Automata,

[C11] Armin Müller, Alexandra Kirsch and Michael Beetz,
Transformational Planning for Everyday Activity,

[C12] Armin Müller and Michael Beetz,
Towards a Plan Library for Household Robots,

[C13] Michael Beetz, Martin Buss and Dirk Wollherr,
Cognitive Technical Systems — What Is the Role of Artificial Intelligence?,
[C14] Radu Bogdan Rusu, Nico Blodow, Zoltan-Csaba Marton, Alina Soos and Michael Beetz, 
Towards 3D Object Maps for Autonomous Household Robots, 

[C15] Dominik Jain, Bernhard Kirchlechner and Michael Beetz, 
Extending Markov Logic to Model Probability Distributions in Relational Domains, 

[C1] Radu Bogdan Rusu, Alexis Maldonado, Michael Beetz, Matthias Kranz, Lorenz Mösenlechner, Paul Holleis and Albrecht Schmidt, 
Player/Stage as Middleware for Ubiquitous Computing, 

[C2] Matthias Kranz, Radu Bogdan Rusu, Alexis Maldonado, Michael Beetz and Albrecht Schmidt, 
A Player/Stage System for Context-Aware Intelligent Environments, 

[C3] Freek Stulp, Mark Pfüger and Michael Beetz, 
Feature Space Generation using Equation Discovery, 
Proceedings of the 29th German Conference on Artificial Intelligence (KI), 2006.

[C4] Michael Beetz, Jan Bandouch, Suat Gedikli, Nico von Hoyningen-Huene, Bernhard Kirchlechner and Alexis Maldonado, 
Camera-based Observation of Football Games for Analyzing Multi-agent Activities, 

[C5] Freek Stulp, Michael Isik and Michael Beetz, 
Implicit Coordination in Robotic Teams using Learned Prediction Models, 

[C6] Freek Stulp and Michael Beetz, 
Action Awareness – Enabling Agents to Optimize, Transform, and Coordinate Plans, 

[C7] Armin Müller and Michael Beetz, 
Designing and Implementing a Plan Library for a Simulated Household Robot, 
[C8] Markus Geipel and Michael Beetz,
Learning to shoot goals, Analysing the Learning Process and the Resulting Policies,
Gerhard Lakemeyer, Elizabeth Sklar, Domenico Sorenti and Tomoichi Takahashi(Eds.),

[C9] Matthias Wimmer, Bernd Radig and Michael Beetz,
A Person and Context Specific Approach for Skin Color Classification,

[J1] Michael Beetz, Bernhard Kirchlechner and Martin Lames,
Computerized Real-Time Analysis of Football Games,

[J2] Michael Beetz and Henrik Grosskreutz,
Probabilistic Hybrid Action Models for Predicting Concurrent Percept-driven Robot Behavior,

[BC1] Michael Beetz,
Towards Comprehensive Computational Models for Plan-Based Control of Autonomous Robots,

[C1] Alexandra Kirsch and Michael Beetz,
Combining Learning and Programming for High-Performance Robot Controllers,

[C2] Alexandra Kirsch, Michael Schweitzer and Michael Beetz,
Making Robot Learning Controllable: A Case Study in Robot Navigation,

[C3] Freek Stulp and Michael Beetz,
Optimized Execution of Action Chains Using Learned Performance Models of Abstract Actions,
Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI), 2005.

[C4] Simone Hämmerle, Matthias Wimmer, Bernd Radig and Michael Beetz,
Sensor-based Situated, Individualized, and Personalized Interaction in Smart Environments,
[J1] Robert Hanek and Michael Beetz, 
The Contracting Curve Density Algorithm: Fitting Parametric Curve Models to Images Using Local Self-adapting Separation Criteria, 

[J2] Michael Beetz, Thorsten Schmitt, Robert Hanek, Sebastian Buck, Freek Stulp, Derik Schröter and Bernd Radig, 
The AGILO Robot Soccer Team – Experience-based Learning and Probabilistic Reasoning in Autonomous Robot Control, 

[C1] Derik Schröter and Michael Beetz, 
RG Mapping: Building Object-Oriented Representations of Structured Human Environments, 
6-th Open Russian-German Workshop on Pattern Recognition and Image Understanding (OGRW), Katun/Russia, 2004.

[C2] Michael Beetz, Sven Flossmann and Thomas Stammeier, 
Motion and Episode Models for (Simulated) Football Games: Acquisition, Representation, and Use, 

[C3] Michael Beetz, Alexandra Kirsch and Armin Müller, 
RPL-LEARN: Extending an Autonomous Robot Control Language to Perform Experience-based Learning, 

[C4] Armin Müller, Alexandra Kirsch and Michael Beetz, 
Object-oriented Model-based Extensions of Robot Control Languages, 
27th German Conference on Artificial Intelligence, 2004.

[C5] Freek Stulp, Alexandra Kirsch, Suat Gedikli and Michael Beetz, 
AGILO RoboCuppers 2004, 

[C6] Freek Stulp, Suat Gedikli and Michael Beetz, 
Evaluating Multi-Agent Robotic Systems Using Ground Truth, 

[C7] M. Beetz, F. Fischer, S. Flossmann, B. Kirchlechner, A. Unseld and C. Holzer, 
Watching Football with the Eyes of Experts: Integrated Intelligent Systems for the Automatic Analysis of (Simulated) Football Games, 

[C8] M. Beetz, B. Kirchlechner and F. Fischer, 
Interpretation and Processing of Position Data for the Empirical Study of the Behavior of Simulation League Robocup Teams, 
[C9] D. Schröter and M. Beetz,
Acquiring Models of Rectangular Objects for Robot Maps,

[C10] D. Schröter, T. Weber, M. Beetz and B. Radig,
Detection and Classification of Gateways for the Acquisition of Structured Robot Maps,

[J1] Robert Hanek, Thorsten Schmitt, Sebastian Buck and Michael Beetz,
Towards RoboCup without color labeling,

[C1] Michael Beetz, Freek Stulp, Alexandra Kirsch, Armin Müller and Sebastian Buck,
Autonomous Robot Controllers Capable of Acquiring Repertoires of Complex Skills,

[C2] Thorsten Schmitt and Michael Beetz,
Designing Probabilistic State Estimators for Autonomous Robot Control,

[C3] Thorsten Schmitt, Robert Hanek and Michael Beetz,
Developing Comprehensive State Estimators for Robot Soccer,

[C4] Michael Beetz, Suat Gedikli, Robert Hanek, Thorsten Schmitt and Freek Stulp,
AGILO RoboCuppers 2003: Computational Principles and Research Directions,

[J1] Thorsten Belker, Michael Beetz and Armin Cremers,
Learning Action Models for the Improved Execution of Navigation Plans,

[J2] Thorsten Schmitt, Robert Hanek, Michael Beetz, Sebastian Buck and Bernd Radig,
Cooperative Probabilistic State Estimation for Vision-based Autonomous Mobile Robots,

[B1] Michael Beetz,
Plan-based Control of Robotic Agents,

[B2] Michael Beetz, Joachim Hertzberg, Malik Ghallab and Martha Pollack,
Advances in Plan-based Control of Robotic Agents,
[BC1] Michael Beetz, 
Towards integrated computational models for the plan-based control of robotic agents.,

[C1] Robert Hanek, Thorsten Schmitt, Sebastian Buck and Michael Beetz,
Towards RoboCup without Color Labeling,

[C2] Thorsten Schmitt, Michael Beetz, Robert Hanek and Sebastian Buck,
Watch their Moves: Applying Probabilistic Multiple Object Tracking to Autonomous Robot Soccer,
The Eighteenth National Conference on Artificial Intelligence, Edmonton, Canada, 2002.

[C3] Robert Hanek, Thorsten Schmitt, Sebastian Buck and Michael Beetz,
Fast Image-based Object Localization in Natural Scenes,

[C4] Michael Beetz, Sebastian Buck, Robert Hanek, Thorsten Schmitt and Bernd Radig,
The AGILO Autonomous Robot Soccer Team: Computational Principles, Experiences, and Perspectives,

[C5] Sebastian Buck, Michael Beetz and Thorsten Schmitt,
Approximating the Value Function for Continuous Space Reinforcement Learning in Robot Control,

[C6] Sebastian Buck, Michael Beetz and Thorsten Schmitt,
M-ROSE: A Multi Robot Simulation Environment for Learning Cooperative Behavior,

[C7] Sebastian Buck, Michael Beetz and Thorsten Schmitt,
Reliable Multi Robot Coordination Using Minimal Communication and Neural Prediction,

[C8] Sebastian Buck, Freek Stulp, Michael Beetz and Thorsten Schmitt,
Machine Control Using Radial Basis Value Functions and Inverse State Projection,
Prof. Michael Beetz

List of Publications


[C3] Thorsten Schmitt, Robert Hanek, Sebastian Buck and Michael Beetz,
Cooperative Probabilistic State Estimation for Vision-based Autonomous Soccer Robots,

[C4] Sebastian Buck, Michael Beetz and Thorsten Schmitt,
Planning and Executing Joint Navigation Tasks in Autonomous Robot Soccer,
5th International Workshop on RoboCup (Robot World Cup Soccer Games and Conferences), 2001.

[C5] Sebastian Buck, U. Weber, Michael Beetz and Thorsten Schmitt,
Multi Robot Path Planning for Dynamic Environments: A case study,

[C6] Thorsten Schmitt, Sebastian Buck and Michael Beetz,
AGILO RoboCuppers 2001: Utility- and Plan-based Action Selection based on Probabilistically Estimated Game Situations,
P. Stone, T. Balch and G. Kraetzschmar(Eds.), 5th International Workshop on RoboCup (Robot World Cup Soccer Games and Conferences), Springer Verlag, Lecture Notes in Computer Science, 2001.

[C7] Michael Beetz and Thorsten Belker,
Learning Structured Reactive Navigation Plans from Executing MDP policies,

[C8] Thorsten Belker and Michael Beetz,
Learning to Execute Robot Navigation Plans,

[C9] Michael Beetz,
Runtime Plan Adaptation in Structured Reactive Controllers,

[C10] Jürgen Schumacher and Michael Beetz,
Ein agentenbasiertes Verfahren zur effizienten Beantwortung von Lieferterminfragen in einer Supply-Chain,

[J1] Michael Beetz, Tom Arbuckle, Thorsten Belker, Maren Bennewitz, Armin Cremers, Dirk Hähnel and Dirk Schulz,
Enabling Autonomous Robots to Perform Complex Tasks,
KI - Künstliche Intelligenz; Special Issue on Autonomous Robots, 2000.

[J2] Sebastian Thrun, Michael Beetz, Maren Bennewitz, Armin Cremers, Frank Dellaert, Dieter Fox, Dirk Hähnel, Charles Rosenberg, Nicholas Roy, Jamieson Schulte and Dirk Schulz,
Probabilistic Algorithms and the Interactive Museum Tour-Guide Robot Minerva,
Prof. Michael Beetz

List of Publications

[B1] Michael Beetz,
Concurrent Reactive Plans: Anticipating and Forestalling Execution Failures,

[C1] Michael Beetz and Thorsten Belker,
Environment and Task Adaptation for Robotic Agents,

[C2] Michael Beetz and Thorsten Belker,
Learning Structured Reactive Navigation Plans from Executing MDP Navigation Policies,

[C3] Michael Beetz, Jürgen Schumacher, Armin Cremers, Bernd Hellingrath and Christian Mazzocco,
Perspectives on Plan-based Multiagent Systems for Distributed Supply Chain Management in the Steel Industry,

[C4] Michael Beetz and Henrik Grosskreutz,
Probabilistic Hybrid Action Models for Predicting Concurrent Percept-driven Robot Behavior,

[C5] Michael Beetz,
Runtime Plan Adaptation in Structured Reactive Controllers,

[PhD1] Michael Beetz,
Plan-based Control of Robotic Agents,
University of Bonn, 2000.

[C1] Tom Arbuckle and Michael Beetz,
Controlling Image Processing; Providing Extensible, Run-time Configurable Functionality on Autonomous Robots,

[C2] Michael Beetz and Thorsten Belker,
Experience- and Model-based Transformational Learning of Symbolic Behavior Specifications,
[C3] T. Arbuckle and M. Beetz,
Extensible, Runtime-configurable Image Processing on Robots — the RECIPE system,

[C4] Michael Beetz, Maren Bennewitz and Henrik Grosskreutz,
Probabilistic, Prediction-based Schedule Debugging for Autonomous Robot Office Couriers,
Proceedings of the 23rd German Conference on Artificial Intelligence (KI 99), Bonn, Germany, Springer Verlag, 1999.

[C5] Michael Beetz,
Structured Reactive Controllers — A computational Model of Everyday Activity,

[C6] Michael Beetz, Markus Giesenschlag, Roman Englert, Eberhard Gülch and Armin Cremers,
Semi-automatic Acquisition of Symbolically-annotated 3D Models of Office Environments,

[J1] Michael Beetz, Wolfram Burgard, Dieter Fox and Armin Cremers,
Integrating Active Localization into High-level Control Systems,

[C1] M. Beetz and H. Grosskreutz,
Causal Models of Mobile Service Robot Behavior,

[C2] Tom Arbuckle and Michael Beetz,
RECIPE - A System for Building Extensible, Run-time Configurable, Image Processing Systems,

[C3] Michael Beetz and Maren Bennewitz,
Planning, Scheduling, and Plan Execution for Autonomous Robot Office Couriers,

[C4] Michael Beetz, Tom Arbuckle, Armin Cremers and Markus Mann,
Transparent, Flexible, and Resource-adaptive Image Processing for Autonomous Service Robots,
Prof. Michael Beetz  
List of Publications

[C5] Michael Beetz and Hanno Peters,
Structured Reactive Communication Plans — Integrating Conversational Actions into High-level Robot Control Systems,
Proceedings of the 22nd German Conference on Artificial Intelligence (KI 98), Bremen, Germany, Springer Verlag, 1998.

[C1] M. Beetz and D. McDermott,
Expressing Transformations of Structured Reactive Plans,

[C2] M. Beetz and D. McDermott,
Fast Probabilistic Plan Debugging,

[C1] M. Beetz and D. McDermott,
Executing Structured Reactive Plans,
L. Pryor and S. Steel(Eds.), AAAI Fall Symposium: Issues in Plan Execution, 1996.

[C2] M. Beetz and D. McDermott,
Local Planning of Ongoing Activities,

[PhD1] M. Beetz,
Anticipating and Forestalling Execution Failures in Structured Reactive Plans,
Yale University, 1996.

[C1] M. Beetz and D. McDermott,
Improving Robot Plans During Their Execution,

[C1] M. Beetz and D. McDermott,
Declarative Goals in Reactive Plans,