

Publications

[Books](#), [Journal Articles](#), [Book Chapters](#), [Proceedings Papers](#), [Abstracts](#), [Non Peer-Reviewed Articles](#), [Theses and Dissertations](#)

Books

1. Bernhard Nessler, Justus Piater, Peter Roth (editors), Austrian Symposium on AI, Robotics, and Vision (AIRoV) Proceedings - March 26-27, 2024 (University of Innsbruck), 2025.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

-
2. Lisa-Marie Faller, Justus Piater, Gerald Steinbauer-Wagner, Mathias Brandstötter (editors), Proceedings of The Austrian Robotics Workshop 2022, 2022 (Austrian Robotics Workshop (ARW)).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

3. Matteo Saveriano, Erwan Renaudo, Antonio Rodríguez-Sánchez, Justus Piater (editors), Human-Friendly Robotics 2020: 13th International Workshop, 2021.

[\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

4. Philipp Zech, Justus Piater, Proceedings of the 6th Austrian Robotics Workshop, 2018.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

5. Michael Zillich, Maren Bennewitz, Maria Fox, Justus Piater, Dejan Pangercic, Proceedings of the 2nd Workshop on Robots in Clutter: Preparing robots for the real world, 2013.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

6. Justus Piater, Antonio Rodríguez Sánchez (editors), Proceedings of the 37th Annual Workshop of the Austrian Association for Pattern Recognition (ÖAGM/AAPR), 2013.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

7. Mario Fritz, Bernt Schiele, Justus Piater (editors), Computer Vision Systems: Seventh International Conference, 2009 (October 13–15, Liège, Belgium). Springer [LNCS 5815](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

8. James Crowley, Justus Piater, Markus Vincze, Lucas Paletta (editors), Computer Vision Systems: Third International Conference, 2003 (April 1–3, Graz, Austria). Springer [LNCS 2626](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[BibTeX](#)]

Journal Articles

1. Dominik Urbaniak, Alejandro Agostini, Pol Ramon, Jan Rosell, Raúl Suárez, Michael Suppa, Obstacle Avoidance using Dynamic Movement Primitives and Reinforcement Learning. IEEE Robotics and Automation Letters 11 (5), pp. 5414–5421, 2026.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

2. Mohammad Esmaeili, Sascha Hammes, Samuele Tosatto, David Geisler-Moroder, Philipp Zech, Safe Reinforcement Learning for Buildings: Minimizing Energy Use While Maximizing Occupant Comfort. *Energies* 18, 2025.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

3. Sayantan Auddy, Antonio Paolillo, Justus Piater, Matteo Saveriano, Imitation learning-based Direct Visual Servoing using the large projection formulation. *Robotics and Autonomous Systems*, 2025, in press.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

4. Fabian Bouvier, Lena Gleirscher, Simon Haller-Seeber, Theo Hug, Madeleine Kaiserer, Miriam Sonntag, Innovative Lehr- und Lernansätze in Lernlaboren: Einblicke in den Media, Inclusion & AI Space des INNALP Education Hub. Medienimpulse 63, 2025.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

5. Philipp Zelger, Manuel Arnold, Sonja Rossi, Josef Seebacher, Franz Muigg, Simone Graf, Antonio Rodríguez-Sánchez, Beyond averaging: A transformer approach to decoding event related brain potentials. *Neuroimage* 308, 2025.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

6. Matteo Cesari, Andrea Portscher, Ambra Stefani, Raphael Angerbauer, Abudaker Ibrahim, Elisabeth Brandauer, Simon Feuerstein, Kristin Egger, Birgit Högl, Antonio Rodríguez-Sánchez, Machine Learning Predicts Phenoconversion from Polysomnography in Isolated REM Sleep Behavior Disorder. *Brain Sciences* 14, 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

7. James Fox, Anna Siebenbrunner, Sandra Reitingner, David Peer, Antonio Rodríguez-Sánchez, Automating avalanche detection in ground-based photographs with deep learning. *Cold Regions Science and Technology* 223, 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

8. David Paulius, Alejandro Agostini, Dongheui Lee, Long-Horizon Planning and Execution with Functional Object-Oriented Networks. *IEEE Robotics and Automation Letters* 8 (8), pp. 4513–4520, 2023.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

9. Sayantan Auddy, Jakob Hollenstein, Matteo Saveriano, Antonio Rodríguez-Sánchez, Justus Piater, Continual learning from demonstration of robotics skills. *Robotics and Autonomous Systems* 165, 2023.

[\[Link\]](#) [\[arXiv\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

10. Hector Perez Villeda, Justus Piater, Matteo Saveriano, Learning and Extrapolation of Robotic Skills using Task-Parameterized Equation Learner Networks. Robotics and Autonomous Systems 160, 2023.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

11. Rémi Dromnelle, Erwan Renaudo, Mohamed Chetouani, Petros Maragos, Raja Chatila, Benoît Girard, Mehdi Khamassi, Reducing Computational Cost During Robot Navigation and Human-Robot Interaction with a Human-Inspired Reinforcement Learning Architecture. *International Journal of Social Robotics*, pp. 1-27, 2022.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

12. Erwan Renaudo, Philipp Zech, Raja Chatila, Mehdi Khamassi, Editorial: Computational models of affordance for robotics. *Frontiers in Neurorobotics: Computational models of affordance for robotics*, 2022.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

13. Josef Gugglberger, David Peer, Antonio Rodríguez-Sánchez, Momentum Capsule Networks. Transactions on Machine Learning Research, 2022.

[\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

14. David Peer, Bart Keulen, Sebastian Stabinger, Justus Piater, Antonio Rodríguez-Sánchez, Improving the Trainability of Deep Neural Networks through Layerwise Batch-Entropy Regularization. Transactions on Machine Learning Research, 2022.

[\[Link\]](#) [\[arXiv\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

15. Jakob Hollenstein, Sayantan Auddy, Matteo Saveriano, Erwan Renaudo, Justus Piater, Action Noise in Off-Policy Deep Reinforcement Learning: Impact on Exploration and Performance. Transactions on Machine Learning Research, 2022.

[\[Link\]](#) [\[arXiv\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

16. David Peer, Sebastian Stabinger, Stefan Engl, Antonio Rodríguez-Sánchez, Greedy-layer pruning: Speeding up transformer models for natural language processing. *Pattern Recognition Letters* 157, p. 76, 2022.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

17. Alper Ahmetoglu, M. Seker, Justus Piater, Erhan Oztop, Emre Ugur, DeepSym: Deep Symbol Generation and Rule Learning for Planning from Unsupervised Robot Interaction. *Journal of Artificial Intelligence Research* 75, pp. 709–745, 2022.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

18. Sebastian Stabinger, David Peer, Justus Piater, Antonio Rodríguez-Sánchez, Evaluating the progress of deep learning for visual relational concepts. *Journal of Vision* 21 (11), p. 8, 2021.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

19. Sebastian Stabinger, David Peer, Antonio Rodríguez-Sánchez, Arguments for the unsuitability of convolutional neural networks for non-local tasks. *Neural Networks* 142, pp. 171-179, 2021.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

20. Gennaro Notomista, Matteo Saveriano, Safety of Dynamical Systems with Multiple Non-Convex Unsafe Sets Using Control Barrier Functions. Control Systems Letters, 2021.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

21. David Peer, Sebastian Stabinger, Antonio Rodríguez-Sánchez, `conflicting_bundle.py` - A python module to identify problematic layers in deep neural networks. *Software Impacts* 7, 2021.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

22. David Peer, Sebastian Stabinger, Antonio Rodríguez-Sánchez, Limitation of capsule networks. Pattern Recognition Letters 144, pp. 68-74, 2021.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

23. Fares J. Abu-Dakka, Matteo Saveriano, Variable impedance control and learning - A review .
Frontiers in Robotics and AI, 2020, to appear.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

24. Senka Krivic, Michael Cashmore, Daniele Magazzeni, Sandor Szedmak, Justus Piater, Using Machine Learning for Decreasing State Uncertainty in Planning. [Journal of Artificial Intelligence Research](#) 69, pp. 765–806, 2020 (30th International Joint Conference on Artificial Intelligence 2021).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

25. Leif Johannsen, Karna Potwar, Matteo Saveriano, Satoshi Endo, Dongheui Lee, Robotic light touch assists human balance control during maximum forward reaching. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, 2020.

[\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

26. Matteo Saveriano, Justus Piater, Combining decision making and dynamical systems for monitoring and executing manipulation tasks. *e & i Elektrotechnik und Informationstechnik* 137 (6), pp. 309–315, 2020.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

27. Alzbeta Tureckova, Tomas Turecek, Zuzana Komikova Oplatkova, Antonio Rodríguez-Sánchez, Improving CT Image Tumor Segmentation Through Deep Supervision and Attentional Gates. *Frontiers in Robotics and AI* 7, 2020.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

28. David Kaulmann, Matteo Saveriano, Dongheui Lee, Joachim Hermsdörfer, Leif Johannsen, Stabilization of body balance with Light Touch following a mechanical perturbation: Adaption of sway and disruption of right posterior parietal cortex by cTBS . PloS ONE, 2020.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

29. Alejandro Agostini, Matteo Saveriano, Dongheui Lee, Justus Piater, Manipulation Planning using Object-centered Predicates and Hierarchical Decomposition of Contextual Actions . IEEE Robotics and Automation Letters 5 (4), pp. 5629–5636, 2020.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

30. Simon Hangl, Vedran Dunjko, Hans Briegel, Justus Piater, Skill Learning by Autonomous Robotic Playing Using Active Learning and Exploratory Behavior Composition. *Frontiers in Robotics and AI* 7, 2020.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

31. Damiano Melotti, Kevin Heimbach, Antonio Rodríguez-Sánchez, Nicola StrisciuglioNicola, George Azzopardi, A robust contour detection operator with combined push-pull inhibition and surround suppression. Information Sciences, 2020.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

32. Philipp Zech, Erwan Renaudo, Simon Haller, Xiang Zhang, Justus Piater, Action representations in robotics: A taxonomy and systematic classification. *International Journal of Robotics Research* 38 (5), pp. 518-562, 2019.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

33. Tadahiro Taniguchi, Emre Ugur, Matej Hoffmann, Lorenzo Jamone, Takayuki Nagai, Benjamin Rosman, Toshihiko Matsuka, Naoto Iwahashi, Erhan Oztop, Justus Piater, Florentin Wörgötter, Symbol Emergence in Cognitive Developmental Systems: a Survey. *IEEE Transactions on Cognitive and Developmental Systems* 11 (4), pp. 494–516, 2019.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

34. Safoura Rezapour Lakani, Antonio Rodríguez-Sánchez, Justus Piater, Towards affordance detection for robot manipulation using affordance for parts and parts for affordance. *Autonomous Robots* 43 (5), pp. 1155–1172, 2019.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

35. Safoura Rezapour Lakani, Antonio Rodríguez-Sánchez, Justus Piater, Exercising Affordances of Objects: A Part-Based Approach. [IEEE Robotics and Automation Letters](#) 3 (4), pp. 3465–3472, 2018.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

36. Lorenzo Jamone, Emre Ugur, Angelo Cangelosi, Luciano Fadiga, Alexandre Bernardino, Justus Piater, José Santos-Victor, Affordances in Psychology, Neuroscience, and Robotics: A Survey. IEEE Transactions on Cognitive and Developmental Systems 10 (1), pp. 4-25, 2018.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

37. Dadhichi Shukla, Özgür Erkent, Justus Piater, Learning Semantics of Gestural Instructions for Human-Robot Collaboration. *Frontiers in Neurorobotics* 12, 2018.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

38. Mirko Wächter, Ekaterina Ovchinnikova, Valerij Wittenbeck, Peter Kaiser, Sandor Szedmak, Wail Mustafa, Dirk Kraft, Norbert Krüger, Justus Piater, Tamim Asfour, Integrating Multi-Purpose Natural Language Understanding, Robot's Memory, and Symbolic Planning for Task Execution in Humanoid Robots. *Robotics and Autonomous Systems* 99, pp. 148–165, 2018.

© Elsevier [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

39. Thiusius Savarimuthu, Anders Buch, Christian Schlette, Nils Wantia, Jürgen Rossmann, David Martínez, Guillem Alenyà, Carme Torras, Aleš Ude, Bojan Nemeč, Aljaž Kramberger, Florentin Wörgötter, Eren Aksoy, Jeremie Papon, Simon Haller, Justus Piater, Norbert Krüger, Teaching a Robot the Semantics of Assembly Tasks . IEEE Transactions on Systems, Man, and Cybernetics: Systems 48 (5), pp. 670–692, 2018.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

40. Philipp Zech, Simon Haller, Safoura Rezapour Lakani, Barry Ridge, Emre Ugur, Justus Piater, Computational models of affordance in robotics: a taxonomy and systematic classification. *Adaptive Behavior* 25 (5), pp. 235–271, 2017.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

41. Simon Hangl, Emre Ugur, Justus Piater, Autonomous robots: potential, advances and future direction. *e&i Elektrotechnik und Informationstechnik* 134 (6), pp. 293–298, 2017.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

42. Özgür Ercent, Hakan Karaoguz, Isil Bozma, Hierarchically self-organizing visual place memory. *Advanced Robotics* 31 (16), pp. 865–879, 2017.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

43. Emre Ugur, Justus Piater, Emergent structuring of interdependent affordance learning tasks using intrinsic motivation and empirical feature selection. *IEEE Transactions on Cognitive and Developmental Systems* 9 (4), pp. 328–340, 2017.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

44. Thomas Hoyoux, Antonio Rodríguez-Sánchez, Justus Piater, Can Computer Vision Problems Benefit from Structured Hierarchical Classification?. *Machine Vision and Applications* 27, pp. 1299-1312, 2016.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

45. Hanchen Xiong, Sandor Szedmak, Justus Piater, Learning Undirected Graphical Models using Persistent Sequential Monte Carlo. *Machine Learning* 103 (2), pp. 239–260, 2016.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

46. Jan Peters, Justus Piater, Robert Platt, Siddhartha Srinivasa (editors), Multimodal Manipulation Under Uncertainty (Dagstuhl Seminar 15411). Dagstuhl Reports 5 (10), pp. 1-18, 2016.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

47. Antonio Rodríguez-Sánchez, Mazyar Fallah, Ales Leonardis, Hierarchical object representations in the visual cortex and computer vision . *Frontiers in Computational Neuroscience* 9 (142), 2015.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

48. Hanchen Xiong, Antonio Rodríguez-Sánchez, Sandor Szedmak, Justus Piater, Diversity priors for learning early visual features. *Frontiers in Computational Neuroscience* 9 (104), 2015.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

49. Michael Hofbauer, Andreas Müller, Justus Piater, Bernhard Rinner, Gerald Steinbauer, Markus Vincze, Christian Wögerer, Making Better Robots – Beiträge Österreichs zur Europäischen Robotics Research Roadmap. e&i Elektrotechnik und Informationstechnik 132 (4), pp. 237–248, 2015.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

50. Florentin Wörgötter, Christopher Geib, Minija Tamošiūnaitė, Eren Aksoy, Justus Piater, Hanchen Xiong, Aleš Ude, Bojan Nemec, Dirk Kraft, Norbert Krüger, Mirko Wächter, Tamim Asfour, Structural bootstrapping - A novel, generative mechanism for faster and more efficient acquisition of action knowledge. *IEEE Transactions on Autonomous Mental Development* 7 (2), pp. 140–154, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

51. Emre Ugur, Yukie Nagai, Erol Sahin, Erhan Oztop, Staged Development of Robot Skills: Behavior Formation, Affordance Learning and Imitation. IEEE Transactions on Autonomous Mental Development 7 (2), pp. 119-139, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

52. Antonio Rodríguez-Sánchez, Heiko Neumann, Justus Piater, Beyond Simple and Complex Neurons: Towards Intermediate-level Representations of Shapes and Objects.. [Künstliche Intelligenz](#) 29, pp. 19–29, 2015.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

53. Hanchen Xiong, Sandor Szedmak, Justus Piater, Scalable, Accurate Image Annotation with Joint SVMs and Output Kernels. *Neurocomputing* 169, pp. 205–214, 2015.

© Elsevier [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

54. Emre Ugur, Yukie Nagai, Hande Celikkanat, Erhan Oztop, Parental scaffolding as a bootstrapping mechanism for learning grasp affordances and imitation skills. *Robotica* 33 (5), pp. 1163-1180, 2015.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

55. Damien Teney, Justus Piater, Multiview feature distributions for object detection and continuous pose estimation. *Computer Vision and Image Understanding* 125, pp. 265–282, 2014.

© Elsevier [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

56. George Azzopardi, Antonio Rodríguez-Sánchez, Justus Piater, Nicolai Petkov, A push-pull CORF model of a simple cell with antiphase inhibition improves SNR and contour detection. PLoS ONE 9 (7), 2014.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

57. Norbert Krüger, Peter Janssen, Sinan Kalkan, Markus Lappe, Aleš Leonardis, Justus Piater, Antonio Rodríguez-Sánchez, Laurenz Wiskott, Deep Hierarchies in the Primate Visual Cortex: What Can We Learn For Computer Vision?. IEEE Transactions on Pattern Analysis and Machine Intelligence 35 (8), pp. 1847-1871, 2013.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

58. Florentin Wörgötter, Eren Aksoy, Norbert Krüger, Justus Piater, Aleš Ude, Minija Tamošiūnaitė, A Simple Ontology of Manipulation Actions based on Hand-Object Relations. *IEEE Transactions on Autonomous Mental Development* 5 (2), pp. 117–134, 2013.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

59. Antonio Rodríguez-Sánchez, John Tsotsos, The roles of endstopped and curvature tuned computations in a hierarchical representation of 2D shape. PLoS ONE 7 (8), 2012.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

60. Mustansar Ghazanfar, Adam Prügel-Bennett, Sandor Szedmak, Kernel-Mapping Recommender System Algorithms. Information Sciences 208, pp. 81–104, 2012.

© Elsevier [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

61. Renaud Detry, Dirk Kraft, Oliver Kroemer, Leon Bodenhausen, Jan Peters, Norbert Krüger, Justus Piater, Learning Grasp Affordance Densities. *Paladyn Journal of Behavioral Robotics* 2 (1), pp. 1-17, 2011.

© Versita [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

62. Justus Piater, Sébastien Jodogne, Renaud Detry, Dirk Kraft, Norbert Krüger, Oliver Kroemer, Jan Peters, Learning Visual Representations for Perception-Action Systems. *International Journal of Robotics Research* 30 (3), pp. 294-307, 2011.

© SAGE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

63. Norbert Krüger, Christopher Geib, Justus Piater, Ronald Petrick, Mark Steedman, Florentin Wörgötter, Aleš Ude, Tamim Asfour, Dirk Kraft, Damir Omrčen, Alejandro Agostini, Rüdiger Dillmann, Object-Action Complexes: Grounded Abstractions of Sensory-motor Processes. *Robotics and Autonomous Systems* 59 (10), pp. 740–757, 2011.

© Elsevier [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

64. Dirk Kraft, Renaud Detry, Nicolas Pugeault, Emre Başeski, Frank Guerin, Justus Piater, Norbert Krüger, Development of Object and Grasping Knowledge by Robot Exploration. IEEE Transactions on Autonomous Mental Development 2 (4), pp. 368–383, 2010.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

65. Oliver Kroemer, Renaud Detry, Justus Piater, Jan Peters, Combining Active Learning and Reactive Control for Robot Grasping. *Robotics and Autonomous Systems* 58 (9), pp. 1105–1116, 2010.

© Elsevier [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

66. Emre Başeski, Nicolas Pugeault, Sinan Kalkan, Leon Bodenhagen, Justus Piater, Norbert Krüger, Using Multi-Modal 3D Contours and Their Relations for Vision and Robotics. *Journal of Visual Communication and Image Representation* 21 (8), pp. 850–864, 2010.

© Elsevier [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

67. Justus Piater, Planning Readings: a Comparative Exploration of Basic Algorithms. *Computer Science Education* 19 (3), pp. 179–192, 2009.

© Taylor & Francis [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

68. Renaud Detry, Nicolas Pugeault, Justus Piater, A Probabilistic Framework for 3D Visual Object Representation. IEEE Transactions on Pattern Analysis and Machine Intelligence 31 (10), pp. 1790–1803, 2009.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

69. Wei Du, Jean-Bernard Hayet, Jacques Verly, Justus Piater, Ground-Target Tracking in Multiple Cameras Using Collaborative Particle Filters and Principal Axis-Based Integration. *IPSA Transactions on Computer Vision and Applications* 1, pp. 58–71, 2009.

© Information Processing Society of Japan [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

70. Sébastien Jodogne, Justus Piater, Closed-Loop Learning of Visual Control Policies. *Journal of Artificial Intelligence Research* 28, pp. 349–391, 2007.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

71. Pierre Gabriel, Justus Piater, Jacques Verly, Object tracking using a combined appearance and geometric model. HF Journal - Belgian Journal of Electronics & Communications (1), Special Issue: URSI (International Union of Radio Science) Forum 2004, Bruxelles, Belgium, p. 46, 2005. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

72. Sébastien Jodogne, Justus Piater, Controlling an Agent by Focusing its Attention on Interactively Selected Patterns. HF Journal - Belgian Journal of Electronics & Communications (1), Special Issue: URSI (International Union of Radio Science) Forum 2004, Bruxelles, Belgium, pp. 14-16, 2005. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

73. Jefferson Coelho, Justus Piater, Roderic Grupen, Developing Haptic and Visual Perceptual Categories for Reaching and Grasping with a Humanoid Robot. Robotics and Autonomous Systems 37 (2-3), Special Issue on Humanoid Robots, pp. 195-218, 2001.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

74. Justus Piater, Edward Riseman, Paul Utgoff, Interactively Training Pixel Classifiers. [International Journal of Pattern Recognition and Artificial Intelligence](#) 13 (2), pp. 171-194, 1999.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

75. Justus Piater, Franz Stuchlik, Hellmut von Specht, Roland Mühler, BAEP: Peak Identification With Automatic Assessment of Reliability. *Audiological Acoustics* 35 (1), pp. 4-11, 1996. [\[Link\]](#) [\[BibTeX\]](#)
76. Justus Piater, Franz Stuchlik, Hellmut von Specht, Roland Mühler, Fuzzy Sets For Feature Identification in Biomedical Signals With Self-Assessment of Reliability: An Adaptable Algorithm Modeling Human Procedure in BAEP Analysis. *Computers and Biomedical Research* 28, pp. 335-353, 1995.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

Book Chapters

1. Mihai Andries, Lorenzo Jamone, Justus Piater, Erol Sahin, On Affordances and their Entailment for Autonomous Robotic Systems. In: Madhur Mangalam, Alen Hajnal, Damian Kelty-Stephen (editors), *The Modern Legacy of Gibson's Affordances for the Sciences of Organisms*, pp. 363-375, 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

2. Erenus Yildiz, Erwan Renaudo, Jakob Hollenstein, Justus Piater, Florentin Wörgötter, An Extended Visual Intelligence Scheme for Disassembly in Automated Recycling Routines. In: , ROBOVIS 2020, ROBOVIS 2021: Robotics, Computer Vision and Intelligent Systems, pp. 25-50, 2022. Springer Communications in Computer and Information Science 1667.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

3. Sasko Ristov, Thomas Fahringer, David Peer, Thanh-Phuong Pham, Marjan Gusev, Carmen Mas-Machuca, Resilient Techniques Against Disruptions of Volatile Cloud Resources. In: Jacek Rak, David Hutchison (editors), Guide to Disaster-Resilient Communication Networks, pp. 379–400, 2020.

© Springer-Verlag [[Home](#)] [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

4. Matteo Saveriano, Dongheui Lee, Incremental Motion Reshaping of Autonomous Dynamical Systems. In: Valeria Villani, Lorenzo Sabattini, Marcello Bonfè (editors), [Human-Friendly Robotics 2019 \(HFR 2019\)](#), pp. 43-57, 2020 (International Workshop on Human-Friendly Robotics (HFR 2019)).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

5. Justus Piater, Das Digital Science Center der Universität Innsbruck. In: Peter Bußjäger, Georg Keuschnigg, Christoph Schramek (editors), Raum neu denken – Von der Digitalisierung zur Dezentralisierung, 2019. new academic press Schriftenreihe des Instituts für Föderalismus 127. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

6. Justus Piater, Emre Ugur, Roboter für Menschen – Menschen für Roboter. In: Andreas Beinsteiner, Tanja Kohn (editors), [Körperphantasien: Technisierung – Optimierung – Transhumanismus](#), pp. 75–86, 2016.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

7. Antonio Rodríguez-Sánchez, Justus Piater, Models of the Visual Cortex for Object Representation: Learning and Wired Approaches. In: Lucio Grandinetti, Thomas Lippert, Nicolai Petkov (editors), Brain-Inspired Computing, pp. 51-62, 2014 (BrainComp 2013). Springer [LNCS 8603](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

8. Erhan Oztop, Emre Ugur, Yu Shimizu, Hiroshi Imamizu, Humanoid Brain Science. In: Gordon Cheng (editor), Humanoid Robotics and Neuroscience: Science, Engineering and Society, pp. 29–48, 2014. CRC Press Frontiers in Neuroengineering Series. [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
9. Antonio Rodríguez-Sánchez, Gregory Dudek, John Tsotsos, Detecting, Representing and Attending to Visual Shape. In: Sven Dickinson, Zygmunt Pizlo (editors), Shape Perception in Human and Computer Vision: An Interdisciplinary Perspective, pp. 429–442, 2013. Springer Advances in Computer Vision and Pattern Recognition.

© Springer-Verlag [[Home](#)] [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

10. Antonio Rodríguez-Sánchez, John Tsotsos, The roles of endstopped and curvature tuned computations in a hierarchical representation of 2D shape. In: M. Pomplun, J. Suzuki (editors), *Developing and Applying Biologically-inspired Vision Systems: Interdisciplinary concepts*, pp. 184–207, 2012.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

11. Renaud Detry, Emre Başeski, Mila Popović, Younes Touati, Norbert Krüger, Oliver Kroemer, Jan Peters, Justus Piater, Learning Continuous Grasp Affordances by Sensorimotor Exploration. In: Olivier Sigaud, Jan Peters (editors), From Motor to Interaction Learning in Robots, pp. 451–465, 2010.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

Proceedings Papers

1. Samuel Frontull, Simon Haller-Seeber, A Tool for Parallel Corpora Augmentation and Refinement. Proceedings of the 19th Conference of the European Chapter of the Association for Computational Linguistics (Volume 3: System Demonstrations), 2026.

[\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

2. Simon Haller-Seeber, Samuel Frontull, TransLoco: AI-Driven Real-Time Transcription, Translation, and Summarization. A self-hosted free-software conference solution. Streifzüge an den Nahtstellen von Medien, Bildung und Philosophie, pp. 397–418, 2026.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

3. Muthukumar Pandaram, Jakob Hollenstein, David Drexel, Samuele Tosatto, Antonio Rodríguez-Sánchez, Justus Piater, Dynamic Sparsity: Challenging Common Sparsity Assumptions for Learning World Models in Robotic Reinforcement Learning Benchmarks. [Conference of the Association for the Advancement of Artificial Intelligence](#), pp. 24727–24735, 2026.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

4. Melanie Neubauer, Ozan Özdenizci, Justus Piater, Elmar Rueckert, Sparsifying Instance Segmentation Models for Efficient Vision-Based Industrial Recycling. Machine Learning and Knowledge Discovery in Databases. Applied Data Science Track and Demo Track, pp. 21–37, 2026. Springer Nature Switzerland [LNAI](#) 16022.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

5. Jakob Hollenstein, Marko Zaric, Samuele Tosatto, Justus Piater, Pink Noise LQR: How does Colored Noise affect the Optimal Policy in RL?. EWRL 2025: European Workshop on Reinforcement Learning, 2025.

[\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

6. David Paulius, Alejandro Agostini, Benedict Quartey, George Konidaris, Bootstrapping Object-level Planning with Large Language Models. International Conference on Robotics and Automation (ICRA), pp. 16233-16239, 2025.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

7. Simon Haller-Seeber, Christopher Kelter, Marko Zaric, Justus Piater, A Free and Open Web-Based IDE for the Sphero Bolt . Robotics in Education, pp. 474-483, 2025. Springer Lecture Notes in Networks and Systems 1544.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

8. David Paulius, Alejandro Agostini, George Konidaris, From Language to Action with Object-level Planning. 2nd CoRL Workshop on Learning Effective Abstractions for Planning, 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

9. Simon Feuerstein, A. Stefani, R. Angerbauer, K. Egger, A. Ibrahim, E. Holzkecht, B. Hogl, Antonio Rodríguez-Sánchez, Matteo Cesari, Sleep structure discriminates patients with isolated REM sleep behavior disorder: a deep learning approach. IEEE Engineering in Medicine and Biology Society (EMBC), 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

10. Henri-Jacques Geiss, Firas Al-Hafez, Andre Seyfarth, Jan Peters, Davide Tateo, Exciting Action: Investigating Efficient Exploration for Learning Musculoskeletal Humanoid Locomotion. IEEE-RAS 23rd International Conference on Humanoid Robots, 2024.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

11. Javier Urena-Santiago, Thomas Strohle, Antonio Rodriguez-Sanchez, Ruth Breu, Vision Transformers for Weakly-Supervised Microorganism Enumeration. [Digital Image Computing: Techniques and Applications 2024](#), 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

12. Mahdi Kallel, Samuele Tosatto, Carlo D'Eramo, Revisiting On-Policy Deep Reinforcement Learning. EWRL 2024: European Workshop on Reinforcement Learning, 2024.

[\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

13. Jakob Hollenstein, Marko Zaric, Samuele Tosatto, Justus Piater, Pink Noise LQR: How does Colored Noise affect the Optimal Policy in RL?. ICML 2024 Workshop: Foundations of Reinforcement Learning and Control, 2024.

[\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

14. Michael Przystupa, Gauthier Gidel, Matthew Taylor, Martin Jagersand, Justus Piater, Samuele Tosatto, Local Linearity is All You Need (in Data-Driven Teleoperation). IEEE/RSJ International Conference on Intelligent Robots and Systems, 2024.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

15. Josip Josifovski, Sayantan Auddy, Mohammadhossein Malmir, Justus Piater, Alois Knoll, Nicolás Navarro-Guerrero, Continual Domain Randomization. IEEE/RSJ International Conference on Intelligent Robots and Systems , 2024.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

16. Jakob Hollenstein, Sayantan Auddy, Justus Piater, Chance & Curiosity: How Does Action Noise Exploration Compare to Curiosity-Based Intrinsic Rewards? . Austrian Symposium on AI, Robotics and Vision, 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

17. Javier Urena-Santiago, Antonio Rodriguez-Sanchez, Solving Microorganism Enumeration through Weakly-Supervised Counting with Vision Transformers - A comparative study. [Austrian Symposium on AI, Robotics and Vision](#), 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

18. Marko Zaric, Jakob Hollenstein, Justus Piater, Erwan Renaudo, Unsupervised Learning of Effective Actions in Robotics. Austrian Symposium on AI, Robotics and Vision, 2024. AIRoV2024 Best Paper Award. InterAC 2024 Best Student Paper Award.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

19. Sayantan Auddy, Sebastian Bergner, Justus Piater, Effect of Optimizer, Initializer, and Architecture of Hypernetworks on Continual Learning from Demonstration. [European Robotics Forum 2024](#), pp. 315–320, 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

20. Quynh Nhu Jennifer Tran, Tina Santner, Antonio Rodríguez-Sánchez, Automatic computation of the Posterior Nipple Line from mammographies. [International Conference on Computer Vision and Applications](#), 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

21. Jakob Hollenstein, Georg Martius, Justus Piater, Colored Noise in PPO: Improved Exploration and Performance through Correlated Action Sampling. [Conference of the Association for the Advancement of Artificial Intelligence](#), pp. 12466–12472, 2024.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

22. Michael Przystupa, Gauthier Gidel, Matthew Taylor, Martin Jägersand, Justus Piater, Samuele Tosatto, Investigating the Benefits of Nonlinear Action Maps in Data-Driven Teleoperation. [Collaborative AI and Modeling of Humans](#), 2024 (AAAI Bridge Program).

[\[Link\]](#) [\[arXiv\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

23. James Fox, Anna Siebenbrunner, Sandra Reitinger, David Peer, Antonio Rodríguez-Sánchez, Deep Learning for Real-time avalanche detection in webcam images. [International Snow Science Workshop](#), pp. 1504–1511, 2023.

[\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

24. Andrea Portscher, A. Angerbauer, A. Ibrahim, Simon Feuerstein, K. Egger, E. Brandauer, M. Bergmann, B. Hogl, A. Stefani, Antonio Rodríguez-Sánchez, Matteo Cesari, A machine learning algorithm to predict short-term phenoconversion from polysomnography in isolated REM sleep behavior disorder. *World Sleep*, 2023. [\[Home\]](#) [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
25. Jakob Hollenstein, Georg Martius, Justus Piater, Colored Noise in PPO: Improved Exploration and Performance Through Correlated Action Sampling. *Sixteenth European Workshop on Reinforcement Learning*, 2023.

[\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

26. Cansu Sancaktar, Justus Piater, Georg Martius, Regularity as Intrinsic Reward for Free Play. Thirty-seventh Conference on Neural Information Processing Systems, pp. 62601–62629, 2023.

[\[Home\]](#) [\[Link\]](#) [\[arXiv\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

27. Amirmohammad Karimi, Jun Jin, Jun Luo, Martin Jagersand, Rupam Mahmood, Samuele Tosatto, Dynamic Decision Frequency with Continuous Options. International Conference on Intelligent Robots and Systems, pp. 7545–7552, 2023.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

28. Michael Przystupa, Faezeh Haghverd, Martin Jagersand, Samuele Tosatto, Deep Probabilistic Movement Primitives with a Bayesian Aggregator. International Conference on Intelligent Robots and Systems, pp. 3704-3711, 2023.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

29. Onno Eberhard, Jakob Hollenstein, Cristina Pinneri, Georg Martius, Pink Noise Is All You Need: Colored Noise Exploration in Deep Reinforcement Learning. International Conference on Learning Representations, 2023.

[\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

30. Thomas Auer, Simon Haller-Seeber, Thomas Gatterer, Towards the design of an interactive continuing training for software engineers in the Internet of Things sustainability using the example of autonomous vehicles. IEEE Global Engineering Education Conference, 2023.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

31. Thomas Auer, Simon Haller-Seeber, Thomas Gatterer, User Experience design of further training on Test automation of an AI self-driving robotic car powered by a Raspberry Pi. IEEE Global Engineering Education Conference, 2023.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

32. Lukas Mölschl, Jakob Hollenstein, Justus Piater, Differentiable Forward Kinematics for TensorFlow 2. Proceedings Austrian Robotics Workshop (ARW) , pp. 13-18, 2023.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

33. Onno Eberhard, Jakob Hollenstein, Cristina Pinneri, Georg Martius, Pink Noise Is All You Need: Colored Noise Exploration in Deep Reinforcement Learning. [Deep Reinforcement Learning Workshop at NeurIPS 2022](#) , 2022.

[\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

34. Philemon Schoepf, Sayantan Auddy, Jakob Hollenstein, Antonio Rodríguez-Sánchez, Hypernetwork-PPO for Continual Reinforcement Learning. Deep Reinforcement Learning Workshop at NeurIPS 2022 , 2022.

[\[Home\]](#) [\[Link\]](#) [\[OpenReview\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

35. Antonio Rodríguez-Sánchez, Simon Haller-Seeber, David Peer, Chris Engelhardt, Jakob Mittelberger, Matteo Saveriano, Affordance detection with Dynamic-Tree Capsule Networks. IEEE-RAS 21st International Conference on Humanoid Robots, 2022.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

36. Andrea Portscher, Sebastian Stabinger, Antonio Rodríguez-Sánchez, Evaluating Attention in Convolutional Neural Networks for Blended Images. IEEE Fifth International Conference on Image Processing Applications and Systems, 2022. © IEEE [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
37. Chris Engelhardt, Jakob Mittleberger, David Peer, Sebastian Stabinger, Antonio Rodríguez-Sánchez, Improving 3D Point Cloud Reconstruction with Dynamic Tree-Structured Capsules. IEEE Fifth International Conference on Image Processing Applications and Systems, 2022. © IEEE [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
38. Simon Haller-Seeber, Thomas Gatterer, Patrick Hofmann, Christopher Kelter, Thomas Auer, Michael Felderer, Software Testing, AI and Robotics (STAIR) Learning Lab. Robotics in Education, pp. 182–189, 2022. Springer LNNS 515.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

39. Alejandro Romero, Justus Piater, Francisco Bellas, Richard Duro, ANN-based Representation Learning in a Lifelong Open-ended Learning Cognitive Architecture. International Joint Conference on Neural Networks, 2022.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

40. Cristof Rojas, Antonio Rodríguez-Sánchez, Erwan Renaudo, Deep Learning for Fast Segmentation of E-waste Devices' Inner Parts in a Recycling Scenario. International Conference on Pattern Recognition and Artificial Intelligence, pp. 161–172, 2022.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

41. Josef Gugglberger, David Peer, Antonio Rodríguez-Sánchez, Training Deep Capsule Networks with Residual Connections. International Conference on Artificial Neural Networks and Machine Learning, 2021.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

42. Fares Abu-Dakka, Matteo Saveriano, Luka Peternel, Periodic DMP formulation for Quaternion Trajectories. IEEE International Conference on Advanced Robotics, 2021.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

43. Jędrzej Orbik, Alejandro Agostini, Dongheui Lee, Inverse reinforcement learning for dexterous hand manipulation. IEEE International Conference on Development and Learning, 2021. © IEEE [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
44. Dominik Urbaniak, Alejandro Agostini, Dongheui Lee, Combining Task and Motion Planning using Policy Improvement with Path Integrals. IEEE-RAS 20th International Conference on Humanoid Robots, pp. 149–155, 2021. © IEEE [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
45. David Peer, Sebastian Stabinger, Antonio Rodríguez-Sánchez, Conflicting Bundles: Adapting Architectures Towards the Improved Training of Deep Neural Networks . IEEE/CVF Winter Conference on Applications of Computer Vision, pp. 256–256, 2021.

[\[Home\]](#) [\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

46. Simon Haller-Seeber, Erwan Renaudo, Philipp Zech, Florian Westreicher, Markus Walzthöni, Cornelia Vidovic, Justus Piater, ROSSINI: RobOt kidS deSign thiNkIng. *Robotics in Education*, pp. 16–25, 2021. Springer AISC 1316.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

47. Patrick Lamprecht, Simon Haller-Seeber, Justus Piater, A Block-based IDE Extension for the ESP32. Robotics in Education, pp. 304–310, 2021. Springer AISC 1316.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

48. Jakob Hollenstein, Matteo Saveriano, Sayantan Auddy, Erwan Renaudo, Justus Piater, How does the type of exploration-noise affect returns and exploration on Reinforcement Learning benchmarks?. [Austrian Robotics Workshop 2021, Vienna, Austria](#) , pp. 22-26, 2021 (Austrian Robotics Workshop).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

49. Jakob Hollenstein, Sayantan Auddy, Matteo Saveriano, Erwan Renaudo, Justus Piater, How do Offline Measures for Exploration in Reinforcement Learning behave?. [Knowledge Based Reinforcement Learning Workshop at IJCAI-PRICAI 2020, Yokohama, Japan](#) , 2021.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

50. Sebastian Stabinger, David Peer, Antonio Rodríguez-Sánchez, Training of Feedforward Networks Fails on a Simple Parity-Task . NeurIPS 2020 Workshop: The pre-registration experiment, 2020.
[\[Link\]](#) [\[BibTeX\]](#)

51. Pilar de la Cruz, Justus Piater, Matteo Saveriano, Reconfigurable Behavior Trees: Towards an Executive Framework Meeting High-Level Decision Making and Control Layer Features. IEEE International Conference on Systems, Man, and Cybernetics, pp. 1915–1922, 2020.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

52. Matteo Saveriano, An Energy-based Approach to Ensure the Stability of Learned Dynamical Systems. IEEE International Conference on Robotics and Automation, 2020.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

53. Rémi Dromnelle, Erwan Renaudo, Guillaume Pourcel, Raja Chatila, Benoît Girard, Mehdi Khamassi, How to reduce computation time while sparing performance during robot navigation? A neuro-inspired architecture for autonomous shifting between model-based and model-free learning.. Proceedings of Living Machines 2020, pp. 68–79, 2020.

[\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

54. Erenus Yildiz, Tobias Brinker, Erwan Renaudo, Jakob Hollenstein, Simon Haller-Seeber, Justus Piater, Florian Wörgötter, A Visual Intelligence Scheme for Hard Drive Disassembly in Automated Recycling Routines.. International Conference on Robotics, Computer Vision and Intelligent Systems, pp. 17–27, 2020. ROBOVIS 2020 Best Paper Award.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

55. Rémi Dromnelle, Benoît Girard, Erwan Renaudo, Raja Chatila, Mehdi Khamassi, Coping with the variability in humans' reward during simulated human-robot interactions through the coordination of multiple learning strategies.. Proceedings of the 29th IEEE International Conference on Robot and Human Interactive Communication, pp. 612–617, 2020.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

56. Sayantan Auddy, Jakob Hollenstein, Matteo Saveriano, Antonio Rodríguez-Sánchez, Justus Piater, Can Expressive Posterior Approximations Improve Variational Continual Learning?. [RO-MAN 2020 Workshop on Lifelong Learning for Long-term Human-Robot Interaction, Naples, Italy](#), 2020. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
57. Matteo Saveriano, Dongheui Lee, Learning Barrier Functions for Constrained Motion Planning with Dynamical Systems. [International Conference on Intelligent Robots and Systems – IROS 2019](#), 2019. [\[Link\]](#) [\[BibTeX\]](#)
58. Antonio Rodríguez-Sánchez, Tobias Dick, Capsule Networks for Attention Under Occlusion. [Artificial Neural Networks and Machine Learning – ICANN 2019](#), pp. 523–534, 2019. Springer LNCS 11731.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

59. Gregor Ehrensperger, Sebastian Stabinger, Antonio Rodríguez-Sánchez, Evaluating CNNs on the Gestalt Principle of Closure. [Artificial Neural Networks and Machine Learning - ICANN 2019](#), pp. 296–301, 2019. Springer [LNCS 11727](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

60. Sayantan Auddy, Sven Magg, Stefan Wermter, Hierarchical Control for Bipedal Locomotion using Central Pattern Generators and Neural Networks. [International Conference on Development and Learning and Epigenetic Robotics](#), pp. 13-18, 2019.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

61. Alzbeta Tureckova, Antonio Rodríguez-Sánchez, ISLES Challenge: U-Shaped Convolution Neural Network with Dilated Convolution for 3D Stroke Lesion Segmentation. [International MICCAI Brainlesion Workshop](#), pp. 319–327, 2019.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

62. M. Seker, Mert Imre, Justus Piater, Emre Ugur, Conditional Neural Movement Primitives. Robotics: Science and Systems, 2019.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

63. Senka Krivic, Justus Piater, Online Adaptation of Robot Pushing Control to Object Properties. [IEEE/RSJ International Conference on Intelligent Robots and Systems](#), pp. 4614–4621, 2018.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

64. Markus Ikeda, Srinivas Maddukuri, Michael Hofmann, Andreas Pichler, Xiang Zhang, Athanasios Polydoros, Justus Piater, Klemens Winkler, Klaus Brenner, Ioan Harton, Uwe Neugebauer, FlexRoP – Flexible, Assistive Robots for Customized Production. Austrian Robotics Workshop, pp. 53–58, 2018.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

65. Stefan Spiss, Yeongmi Kim, Simon Haller, Matthias Harders, Comparison of Tactile Signals for Collision Avoidance on Unmanned Aerial Vehicles. [Haptic Interaction \(Proceedings of the 2nd Asia Haptics Conference, 2016\)](#), pp. 393–399, 2018. Springer LNEE 432.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

66. Antonio Rodríguez-Sánchez, Daly Chea, George Azzopardi, Sebastian Stabinger, A deep learning approach for detecting and correcting highlights in endoscopic images. [International Conference on Image Processing Theory, Tools and Applications.](#), 2017, to appear.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

67. Stabinger Sebastian, Rodríguez-Sánchez Antonio, Evaluation of Deep Learning on an Abstract Image Classification Dataset. [Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition](#), pp. 2767-2772, 2017 (Workshop on Mutual Benefits of Cognitive and Computer Vision (MBCC)).

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

68. Özgür Ercent, Dadhichi Shukla, Justus Piater, Visual Task Outcome Verification Using Deep Learning. [IEEE/RSJ International Conference on Intelligent Robots and Systems](#), pp. 4821–4827, 2017 (Vancouver, Canada).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

69. Simon Hangl, Sebastian Stabinger, Justus Piater, Autonomous Skill-centric Testing using Deep Learning. [IEEE/RSJ International Conference on Intelligent Robots and Systems](#), pp. 95–102, 2017.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

70. Dadhichi Shukla, Özgür Erkent, Justus Piater, Proactive, Incremental Learning of Gesture-Action Associations For Human-Robot Collaboration. [International Symposium on Robot and Human Interactive Communication](#), pp. 346–353, 2017 (Lisbon, Portugal).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

71. Senka Krivic, Michael Cashmore, Daniele Magazzeni, Bram Ridder, Sandor Szedmak, Justus Piater, Decreasing Uncertainty in Planning with State Prediction. [International Joint Conference on Artificial Intelligence](#), pp. 2032-2038, 2017.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

72. Jelizaveta Konstantinova, Senka Krivic, Agostino Stilli, Justus Piater, Kaspar Althoefer, Autonomous Object Handover using Wrist Tactile Information. [Towards Autonomous Robotic Systems](#), pp. 450–463, 2017.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

73. Dadhichi Shukla, Özgür Erkent, Justus Piater, Supervised learning of gesture-action associations for human-robot collaboration. [1st International Workshop on Adaptive Shot Learning for Gesture Understanding and Production](#), pp. 5–10, 2017 (Workshop at the 12th IEEE International Conference on Automatic Face and Gesture Recognition (FG 2017), Washington D.C., USA).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

74. Safoura Rezapour Lakani, Antonio Rodríguez-Sánchez, Justus Piater, Can Affordances Guide Object Decomposition Into Semantically Meaningful Parts?. [IEEE Winter Conference on Applications of Computer Vision](#), pp. 82-90, 2017.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

75. Senka Krivic, Michael Cashmore, Bram Ridder, Daniele Magazzeni, Sandor Szedmak, Justus Piater, Initial State Prediction in Planning. [Knowledge-based techniques for problem solving and reasoning, Workshop at AAAI 2017](#), pp. 750–757, 2017.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

76. Simon Hangl, Emre Ugur, Sandor Szedmak, Justus Piater, Robotic Playing for Hierarchical Complex Skill Learning. [IEEE/RSJ International Conference on Intelligent Robots and Systems](#), pp. 2799–2804, 2016.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

77. Antonio Rodríguez-Sánchez, Sabine Oberleiter, Hanchen Xiong, Justus Piater, Learning V4 curvature cell populations from sparse endstopped cells. [Artificial Neural Networks and Machine Learning – ICANN 2016](#), pp. 463–471, 2016. Springer [LNCS 9887](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

78. Özgür Ercent, Dadhichi Shukla, Justus Piater, Integration of Probabilistic Pose Estimates From Multiple Views. [European Conference on Computer Vision](#), pp. 154–170, 2016 (Amsterdam, Netherlands). Springer [LNCS 9911](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

79. Senka Krivic, Emre Ugur, Justus Piater, A Robust Pushing Skill For Object Delivery Between Obstacles. [International Conference on Automation Science and Engineering](#), pp. 1184–1189, 2016 (Fort Worth, Texas).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

80. Sebastian Stabinger, Antonio Rodríguez-Sánchez, Justus Piater, 25 years of CNNs: Can we compare to human abstraction capabilities?. [Artificial Neural Networks and Machine Learning - ICANN 2016](#), pp. 380–387, 2016. Springer LNCS 9887.

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

81. Dadhichi Shukla, Özgür Erkent, Justus Piater, A Multi-View Hand Gesture RGB-D Dataset for Human-Robot Interaction Scenarios. [International Symposium on Robot and Human Interactive Communication](#), pp. 1084–1091, 2016 (New York, USA).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

82. Sabrina Fontanella, Antonio Rodríguez-Sánchez, Justus Piater, Sandor Szedmak, Kronecker decomposition for image classification. Experimental IR Meets Multilinguality, Multimodality, and Interaction – Proceedings of the 7th International Conference of the CLEF Association, pp. 137–149, 2016. Springer [LNCS 9822](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

83. Manuel Lang, Justus Piater, Explaining Point Cloud Segments in Terms of Object Models. [OAGM & ARW Joint Workshop on Computer Vision and Robotics](#), pp. 123–130, 2016.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

84. Sebastian Stabinger, Antonio Rodríguez-Sánchez, Justus Piater, Monocular Obstacle Avoidance for Blind People using Probabilistic Focus of Expansion Estimation. [IEEE Winter Conference on Applications of Computer Vision](#), 2016.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

85. Sebastian Stabinger, Antonio Rodríguez-Sánchez, Justus Piater, Learning Abstract Classes using Deep Learning. [The First International Workshop on Computational Models of the Visual Cortex, 2015.](#)

[\[Link\]](#) [\[arXiv\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

86. Emre Ugur, Justus Piater, Refining discovered symbols with multi-step interaction experience. [IEEE International Conference on Humanoid Robotics](#), pp. 1007-1012, 2015 (Seoul, Korea).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

87. Dadhichi Shukla, Özgür Erkent, Justus Piater, Probabilistic detection of pointing directions for human robot interaction. [International Conference on Digital Image Computing: Techniques and Applications](#), 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

88. Kerstin Fischer, Lars Jensen, Franziska Kirstein, Sebastian Stabinger, Özgür Erkent, Dadhichi Shukla, Justus Piater, The Effects of Social Gaze in Human-Robot Collaborative Assembly. [Social Robotics](#), pp. 204–213, 2015. Springer [LNAI 9388](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

89. Wail Mustafa, Hanchen Xiong, Dirk Kraft, Sandor Szedmak, Justus Piater, Norbert Krüger, Multi-Label Object Categorization Using Histograms of Global Relations. [International Conference on 3D Vision](#), pp. 309–317, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

90. Antonio Rodríguez-Sánchez, Sandor Szedmak, Justus Piater, SCurV: A 3D Descriptor for Object Classification. [IEEE/RSJ International Conference on Intelligent Robots and Systems](#), pp. 1320–1327, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

91. Alejandro Agostini, Mohamad Aein, Sandor Szedmak, Eren Aksoy, Justus Piater, Florentin Wörgötter, Using Structural Bootstrapping for Object Substitution in Robotic Executions of Human-Like Manipulation Tasks. [IEEE/RSJ International Conference on Intelligent Robots and Systems](#), pp. 6479–6486, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

92. Antonio Rodríguez-Sánchez, Sabrina Fontanella, Justus Piater, Sandor Szedmak, IIS at ImageCLEF 2015: Multi-label classification task. [Conference and Labs of the Evaluation Forum](#), 2015.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

93. Thomas Hoyoux, Antonio Rodríguez-Sánchez, Justus Piater, Sandor Szedmak, Can Computer Vision Problems Benefit from Structured Hierarchical Classification?. [Computer Analysis of Images and Patterns](#), pp. 403–414, 2015. Springer [LNCS 9257](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

94. Philipp Zech, Hanchen Xiong, Justus Piater, Rotation Optimization on the Unit Quaternion Manifold and its Application for Robotic Grasping. [1st IMA Conference on Mathematics of Robotics](#), 2015.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

95. Dadhichi Shukla, Özgür Erkent, Justus Piater, General Object Tip Detection and Pose Estimation for Robot Manipulation. 10th International Conference on Computer Vision Systems, pp. 364–374, 2015. Springer [LNCS 9163](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

96. Simon Hangl, Emre Ugur, Sandor Szedmak, Ales Ude, Justus Piater, Reactive, Task-specific Object Manipulation by Metric Reinforcement Learning. [17th International Conference on Advanced Robotics](#), pp. 557-564, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

97. Barry Ridge, Emre Ugur, Ales Ude, Comparison of Action-Grounded and Non-Action-Grounded 3-D Shape Features for Object Affordance Classification. [17th International Conference on Advanced Robotics](#), pp. 635-641, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

98. Safoura Rezapour Lakani, Mirela Popa, Antonio Rodríguez-Sánchez, Justus Piater, CPS: 3D Compositional Part Segmentation through Grasping. [12th Conference on Computer and Robot Vision](#), pp. 117–124, 2015. Best Robotic Vision Paper Award.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

99. Guowu Wei, Jie Sun, Xinsheng Zhang, Dirk Pensky, Justus Piater, Jian Dai, Metamorphic Hand Based Grasp Constraint and Affordance. ASME 2015 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, 2015.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

100. Emre Ugur, Justus Piater, Bottom-Up Learning of Object Categories, Action Effects and Logical Rules: From Continuous Manipulative Exploration to Symbolic Planning. [International Conference on Robotics and Automation](#), pp. 2627-2633, 2015.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

101. Senka Krivić, Sandor Szedmak, Hanchen Xiong, Justus Piater, Learning missing edges via kernels in partially-known graphs. [European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning](#), 2015.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

102. Hanchen Xiong, Sandor Szedmak, Justus Piater, Towards Maximum Likelihood: Learning Undirected Graphical Models using Persistent Sequential Monte Carlo. 6th Asian Conference on Machine Learning, pp. 205–220, 2015. Best Paper Award. Journal of Machine Learning Research: Workshop and Conference Proceedings 39.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

103. Hanchen Xiong, Sandor Szedmak, Justus Piater, Implicit Learning of Simpler Output Kernels for Multi-Label Prediction. [NIPS workshop on Representation and Learning for Complex Outputs](#), 2014.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

104. Emre Ugur, Sandor Szedmak, Justus Piater, Bootstrapping paired-object affordance learning with learned single-affordance features. [The Fourth Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics](#), pp. 476–481, 2014.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

105. Emre Ugur, Justus Piater, Emergent Structuring of Interdependent Affordance Learning Tasks. [The Fourth Joint IEEE International Conference on Development and Learning and on Epigenetic Robotics](#), pp. 489–494, 2014.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

106. Sandor Szedmak, Emre Ugur, Justus Piater, Knowledge Propagation and Relation Learning for Predicting Action Effects. [IEEE/RSJ International Conference on Intelligent Robots and Systems](#), pp. 623-629, 2014.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

107. Simon Hangl, Senka Krivić, Philipp Zech, Emre Ugur, Justus Piater, Exploiting the Environment for Object Manipulation. [Austrian Robotics Workshop](#), 2014. Best Student Paper Award. [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]
108. Emre Ugur, Sandor Szedmak, Justus Piater, Complex affordance learning based on basic affordances. 22nd Signal Processing and Communications Applications Conference, pp. 698–701, 2014.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

109. Hanchen Xiong, Sandor Szedmak, Antonio Rodríguez-Sánchez, Justus Piater, Towards Sparsity and Selectivity: Bayesian Learning of Restricted Boltzmann Machine for Early Visual Features. [24th International Conference on Artificial Neural Networks](#), pp. 419–426, 2014. Springer [LNCS](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

110. Hanchen Xiong, Sandor Szedmak, Justus Piater, Joint SVM for Accurate and Fast Image Tagging. [European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning](#), pp. 295–330, 2014.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

111. David Martínez, Guillem Alenyà, Pablo Jiménez, Carme Torras, Jürgen Roßmann, Nils Wantia, Eren Aksoy, Simon Haller, Justus Piater, Active Learning of Manipulation Sequences. International Conference on Robotics and Automation, pp. 5671-5678, 2014.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

112. Christoph Schmidt, Oscar Koller, Hermann Ney, Thomas Hoyoux, Justus Piater, Using Viseme Recognition to Improve a Sign Language Translation System. International Workshop on Spoken Language Translation, pp. 197–203, 2013. [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]
113. Christoph Schmidt, Oscar Koller, Hermann Ney, Thomas Hoyoux, Justus Piater, Enhancing Gloss-Based Corpora with Facial Features Using Active Appearance Models. [Third International Symposium on Sign Language Translation and Avatar Technology](#), 2013. [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]
114. Emre Ugur, Yukie Nagai, Erhan Oztop, Parental scaffolding as a bootstrapping mechanism for learning grasp affordances and imitation skills. 22nd International Workshop on Robotics in Alpe-Adria-Danube Region, pp. 167–174, 2013. Best Paper Research Award. [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

115. Renaud Detry, Justus Piater, Unsupervised Learning Of Predictive Parts For Cross-Object Grasp Transfer. IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 1720–1727, 2013.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

116. Hanchen Xiong, Sandor Szedmak, Justus Piater, 3D Object Class Geometry Modeling with Spatial Latent Dirichlet Markov Random Fields. [35th German Conference on Pattern Recognition \(former DAGM\)](#), pp. 51–60, 2013. Springer [LNCS 8142](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

117. Hanchen Xiong, Sandor Szedmak, Justus Piater, Homogeneity Analysis for Object-Action Relation Reasoning in Kitchen Scenarios. 2nd Workshop on Machine Learning for Interactive Systems, pp. 37-44, 2013 (Workshop at IJCAI).

© ACM [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

118. Hanchen Xiong, Sandor Szedmak, Justus Piater, A Study of Point Cloud Registration with Probability Product Kernel Functions. [International Conference on 3D Vision](#), pp. 207–214, 2013.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

119. Hanchen Xiong, Sandor Szedmak, Justus Piater, Efficient, General Point Cloud Registration With Kernel Feature Maps. [Tenth Conference on Computer and Robot Vision](#), pp. 83–90, 2013.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

120. Damien Teney, Justus Piater, Continuous Pose Estimation in 2D Images at Instance and Category Levels. [Tenth Conference on Computer and Robot Vision](#), pp. 121-127, 2013. Best Vision Paper Award.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

121. Damien Teney, Justus Piater, Modeling Pose/Appearance Relations for Improved Object Localization and Pose Estimation in 2D images. [6th Iberian Conference on Pattern Recognition and Image Analysis](#), pp. 59–68, 2013. Springer [LNCS 7887](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

122. Damien Teney, Justus Piater, Generalized Exemplar-Based Full Pose Estimation from 2D Images without Correspondences. Digital Image Computing: Techniques and Applications, 2012.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

123. Damien Teney, Justus Piater, Sampling-based Multiview Reconstruction without Correspondences for 3D Edges. [3DimPVT](#), pp. 160-167, 2012.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

124. Lars-Peter Ellekilde, Jimmy Jørgensen, Dirk Kraft, Norbert Krüger, Justus Piater, Henrik Petersen, Applying a Learning Framework for Improving Success Rates in Industrial Bin Picking. IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 1637-1643, 2012.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

125. Jens Forster, Christoph Schmidt, Thomas Hoyoux, Oscar Koller, Uwe Zelle, Justus Piater, Hermann Ney, RWTH-PHOENIX-Weather: A Large Vocabulary Sign Language Recognition and Translation Corpus. [8th International Conference on Language Resources and Evaluation](#), pp. 3785–3789, 2012 (Istanbul, Turkey). [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]
126. Renaud Detry, Carl Henrik Ek, Marianna Madry, Justus Piater, Danica Kragić, Generalizing Grasps Across Partly Similar Objects. [International Conference on Robotics and Automation](#), pp. 3791–3797, 2012.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

127. Mustansar Ghazanfar, Sandor Szedmak, Adam Prügel-Bennett, Incremental Kernel Mapping Algorithms for Scalable Recommender Systems. IEEE International Conference on Tools with Artificial Intelligence, pp. 1077-1084, 2011.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

128. Damien Teney, Justus Piater, Probabilistic Object Models for Pose Estimation in 2D Images. DAGM, pp. 336–345, 2011. Springer [LNCS](#) 6835/2011.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

129. Leon Bodenhagen, Renaud Detry, Justus Piater, Norbert Krüger, What a successful grasp tells about the success chances of grasps in its vicinity. ICDL-EpiRob, 2011.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

130. Justus Piater, Sébastien Jodogne, Renaud Detry, Dirk Kraft, Norbert Krüger, Oliver Kroemer, Jan Peters, Learning Visual Representations for Interactive Systems. 14th International Symposium on Robotics Research, pp. 399–416, 2011 (August 31–September 3 2009, Lucerne, Switzerland). Invited paper. Springer Tracts in Advanced Robotics 70/2011.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

131. Renaud Detry, Justus Piater, Continuous surface-point distributions for 3D object pose estimation and recognition. Asian Conference on Computer Vision, pp. 572-585, 2010. Springer [LNCS 6494](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

132. Arnaud Declercq, Justus Piater, Affine warp propagation for fast simultaneous modelling and tracking of articulated objects. Asian Conference on Computer Vision, pp. 422–435, 2010. Springer [LNCS 6494](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

133. Wei Du, Justus Piater, Hand Modeling and Tracking for Video-Based Sign Language Recognition by Robust Principal Component Analysis. [International Workshop on Sign, Gesture and Activity](#), pp. 273–285, 2010 (Workshop at the European Conference on Computer Vision, Hersonissos, Crete, Greece). Springer [LNCS](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

134. Norbert Krüger, Nicolas Pugeault, Emre Başeski, Lars Jensen, Sinan Kalkan, Dirk Kraft, Jeppe Jessen, Florian Pilz, Anders Kjær-Nielsen, Mila Popović, Tamim Asfour, Justus Piater, Danica Kragić, Florentin Wörgötter, Early Cognitive Vision as a Front-End for Cognitive Systems. Vision for Cognitive Tasks, 2010 (Workshop at the European Conference on Computer Vision, Hersonissos, Crete, Greece). [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

135. Ayşe Erkan, Oliver Kroemer, Renaud Detry, Yasemin Altun, Justus Piater, Jan Peters, Learning Probabilistic Discriminative Models of Grasp Affordances under Limited Supervision. IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 1586–1591, 2010 (Taipei, Taiwan).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

136. Oliver Kroemer, Renaud Detry, Justus Piater, Jan Peters, Adapting Preshaped Grasping Movements using Vision Descriptors. From Animals to Animats 11 - International Conference on the Simulation of Adaptive Behavior, pp. 156-166, 2010. Springer [LNCS 6226/2010](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

137. Oliver Kroemer, Renaud Detry, Justus Piater, Jan Peters, Grasping with Vision Descriptors and Motor Primitives. International Conference on Informatics in Control, Automation and Robotics, pp. 211–223, 2010. Best Paper Award in Robotics and Automation. Springer Lecture Notes in Electrical Engineering 89/3.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

138. Justus Piater, Thomas Hoyoux, Wei Du, Video Analysis for Continuous Sign Language Recognition. [4th Workshop on the Representation and Processing of Sign Languages: Corpora and Sign Language Technologies](#), 2010 (Workshop at the 7th International Conference on Language Resources and Evaluation (LREC), Malta). [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
139. Philippe Dreuw, Jens Forster, Yannick Gweth, Daniel Stein, Hermann Ney, Gregorio Martínez Ruiz, Jaume Vergés Lahí, Onno Crasborn, Ellen Ormel, Wei Du, Thomas Hoyoux, Justus Piater, José Moya Lazaro, Mark Wheatley, SignSpeak - Understanding, Recognition, and Translation of Sign Languages. [4th Workshop on the Representation and Processing of Sign Languages: Corpora and Sign Language Technologies](#), 2010 (Workshop at the 7th International Conference on Language Resources and Evaluation (LREC), Malta). [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
140. Philippe Dreuw, Hermann Ney, Gregorio Martínez Ruiz, Onno Crasborn, Justus Piater, José Moya Lazaro, Mark Wheatley, The SignSpeak Project - Bridging the Gap Between Signers and

Speakers. [7th International Conference on Language Resources and Evaluation](#), 2010 (Valletta, Malta). [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

141. Renaud Detry, Dirk Kraft, Anders Buch, Norbert Krüger, Justus Piater, Refining Grasp Affordance Models by Experience. *International Conference on Robotics and Automation*, pp. 2287–2293, 2010 (Anchorage, AK, USA).

© IEEE [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

142. Dirk Kraft, Renaud Detry, Nicolas Pugeault, Emre Başeski, Justus Piater, Norbert Krüger, Learning Objects and Grasp Affordances through Autonomous Exploration. *Computer Vision Systems: Seventh International Conference*, pp. 235–244, 2009. Springer [LNCS 5815](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

143. Emre Başeski, Leon Bodenhagen, Nicolas Pugeault, Sinan Kalkan, Justus Piater, Norbert Krüger, Using 3D Contours and Their Relations for Cognitive Vision and Robotics. 24th International Symposium on Computer and Information Sciences, Special Session on Cognitive Cybernetics and Brain Modeling, 2009 (Northern Cyprus).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

144. Oliver Kroemer, Renaud Detry, Justus Piater, Jan Peters, Active Learning using Mean Shift Optimization for Robot Grasping. IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 2610–2615, 2009.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

145. Renaud Detry, Emre Başeski, Mila Popović, Younes Touati, Norbert Krüger, Oliver Kroemer, Jan Peters, Justus Piater, Learning Object-specific Grasp Affordance Densities. International Conference on Development and Learning, 2009 (Shanghai, China).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

146. Wei Du, Justus Piater, A Probabilistic Approach to Integrating Multiple Cues in Visual Tracking. 10th European Conference on Computer Vision, pp. 225–238, 2008. Springer [LNCS 5303](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

147. Renaud Detry, Nicolas Pugeault, Justus Piater, Probabilistic Pose Recovery Using Learned Hierarchical Object Models. International Cognitive Vision Workshop, pp. 107–120, 2008 (Workshop at the 6th International Conference on Vision Systems). Springer [LNCS 5329](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

148. Dirk Kraft, Emre Başeski, Mila Popović, Anna Batog, Anders Kjær-Nielsen, Norbert Krüger, Ronald Petrick, Christopher Geib, Nicolas Pugeault, Mark Steedman, Tamim Asfour, Rüdiger Dillmann, Sinan Kalkan, Florentin Wörgötter, Bernhard Hommel, Renaud Detry, Justus Piater, Exploration and Planning in a Three-Level Cognitive Architecture. International Conference on Cognitive Systems, 2008. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
149. Arnaud Declercq, Justus Piater, Online Learning of Gaussian Mixture Models: A Two-Level Approach. International Conference on Computer Vision Theory and Applications, pp. 605–611, 2008. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
150. Jean-Bernard Hayet, Justus Piater, On-Line Rectification of Sport Sequences with Moving Cameras. Mexican International Conference on Artificial Intelligence, pp. 736–746, 2007. Springer [LNCS 4827](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

151. Wei Du, Justus Piater, Multi-Camera People Tracking by Collaborative Particle Filters and Principal Axis-Based Integration. [Asian Conference on Computer Vision](#), pp. 365–374, 2007. Springer [LNCS 4843](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

152. Renaud Detry, Justus Piater, Hierarchical Integration of Local 3D Features for Probabilistic Pose Recovery. Robot Manipulation: Sensing and Adapting to the Real World, 2007 (Workshop at Robotics, Science and Systems). [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]
153. Wei Du, Justus Piater, Sequential Variational Inference for Distributed Multi-Sensor Tracking and Fusion. The 10th International Conference on Information Fusion, 2007.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

154. Arnaud Declercq, Justus Piater, On-line Simultaneous Learning and Tracking of Visual Feature Graphs. [Online Learning for Classification Workshop](#), 2007 (Workshop at CVPR, Minneapolis, MN, USA).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

155. Fabien Scalzo, Justus Piater, Adaptive Patch Features for Object Class Recognition with Learned Hierarchical Models. 2nd Beyond Patches Workshop, 2007 (Workshop at CVPR, Minneapolis, MN, USA).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

156. Joanna Olszewska, Tom Mathes, Christophe De Vleeschouwer, Justus Piater, Benoît Macq, Non-Rigid Object Tracker Based On a Robust Combination of Parametric Active Contour and Point Distribution Model. Proceedings of the SPIE Conference on Visual Communication and Image Processing, 2007.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

157. Sébastien Jodogne, Cyril Briquet, Justus Piater, Approximate Policy Iteration for Closed-Loop Learning of Visual Tasks. [17th European Conference on Machine Learning](#), pp. 210–221, 2006. Springer [LNCS 4212](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

158. Sébastien Jodogne, Justus Piater, Task-Driven Discretization of the Joint Space of Visual Percepts and Continuous Actions. [European Conference on Machine Learning](#), pp. 222–233, 2006 (Berlin, Germany). Springer [LNCS 4212](#).

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

159. Tom Mathes, Justus Piater, Robust Non-Rigid Object Tracking Using Point Distribution Manifolds. 28th Annual Symposium of the German Association for Pattern Recognition (DAGM), pp. 515-524, 2006. Springer [LNCS 4174](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

160. Fabien Scalzo, Justus Piater, Unsupervised Learning of Dense Hierarchical Appearance Representations. [International Conference on Pattern Recognition](#), pp. 395–398, 2006.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

161. Wei Du, Justus Piater, Data Fusion by Belief Propagation for Multi-Camera Tracking. The 9th International Conference on Information Fusion, 2006.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

162. Xavier Desurmont, Jean-Bernard Hayet, Jean-François Delaigle, Justus Piater, Benoît Macq, TRICTRAC Video Dataset: Public HDTV Synthetic Soccer Video Sequences With Ground Truth. [Workshop on Computer Vision Based Analysis in Sport Environments \(CVBASE\)](#), pp. 92-100, 2006. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
163. Wei Du, Jean-Bernard Hayet, Justus Piater, Jacques Verly, Collaborative Multi-Camera Tracking of Athletes in Team Sports. [Workshop on Computer Vision Based Analysis in Sport Environments \(CVBASE\)](#), pp. 2-13, 2006. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
164. Wei Du, Justus Piater, Multi-view Object Tracking Using Sequential Belief Propagation. Asian Conference on Computer Vision, pp. 684-693, 2006 (Hyderabad, India). Springer [LNCS 3851](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

165. Sébastien Jodogne, Justus Piater, Learning, then Compacting Visual Policies. [7th European Workshop on Reinforcement Learning](#), pp. 8-10, 2005 (Naples, Italy). [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
166. Raphaël Marée, Pierre Geurts, Justus Piater, Louis Wehenkel, Biomedical Image Classification with Random Subwindows and Decision Trees. *Computer Vision for Biomedical Image Applications*, pp. 220-229, 2005 (Workshop at ICCV, Beijing, China). Springer [LNCS 3765](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

167. Tom Mathes, Justus Piater, Robust Non-Rigid Object Tracking Using Point Distribution Models. British Machine Vision Conference, pp. 849-858, 2005.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

168. Pierre Gabriel, Jean-Bernard Hayet, Justus Piater, Jacques Verly, Object Tracking Using Color Interest Points. International Conference on Advanced Video and Signal based Surveillance, pp. 159-164, 2005.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

169. Wei Du, Justus Piater, Tracking by Cluster Analysis of Feature Points using a Mixture Particle Filter. International Conference on Advanced Video and Signal based Surveillance, pp. 165–170, 2005.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

170. Jean-Bernard Hayet, Tom Mathes, Jacek Czyz, Justus Piater, Jacques Verly, Benoît Macq, A Modular Multi-Camera Framework for Team Sports Tracking. International Conference on Advanced Video and Signal based Surveillance, pp. 493–498, 2005.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

171. Sébastien Jodogne, Justus Piater, Interactive Learning of Mappings from Visual Percepts to Actions. 22nd International Conference on Machine Learning, pp. 393–400, 2005 (Bonn, Germany).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

172. Wei Du, Justus Piater, Tracking by cluster analysis of feature points and multiple particle filters. [3rd International Conference on Advances in Pattern Recognition](#), pp. 701–710, 2005. Springer LNCS 3687.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

173. Raphaël Marée, Pierre Geurts, Justus Piater, Louis Wehenkel, Decision Trees and Random Subwindows for Object Recognition. Proceedings of the ICML Workshop on Machine Learning Techniques for Processing Multimedia Content (MLMM), 2005. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
174. Jean-Bernard Hayet, Justus Piater, Jacques Verly, Fast 2D Model-to-Image Registration Using Vanishing Points for Sports Video Analysis. [Proceedings of the IEEE International Conference on Image Processing](#), pp. 417–420, 2005 (Genova, Italy).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

175. Fabien Scalzo, Justus Piater, Unsupervised Learning of Visual Feature Hierarchies. Proceedings of the International Conference on Machine Learning and Data Mining (MLDM), pp. 243–252, 2005 (Leipzig, Germany). Springer [LNCS 3587](#).

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

176. Sébastien Jodogne, Fabien Scalzo, Justus Piater, Task-Driven Learning of Spatial Combinations of Visual Features. Proc. of the IEEE Workshop on Learning in Computer Vision and Pattern Recognition, 2005 (Workshop at CVPR, San Diego, CA, USA).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

177. Fabien Scalzo, Justus Piater, Statistical Learning of Visual Feature Hierarchies. Proc. of the IEEE Workshop on Learning in Computer Vision and Pattern Recognition, 2005 (Workshop at CVPR, San Diego, CA, USA).

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

178. Raphaël Marée, Pierre Geurts, Justus Piater, Louis Wehenkel, Random Subwindows for Robust Image Classification. Proceedings of the IEEE International Conference on Computer Vision and Pattern Recognition (CVPR), pp. 34–40, 2005.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

179. Pierre Gabriel, Jean-Bernard Hayet, Justus Piater, Jacques Verly, Utilisation des Points d'Intérêts Couleurs pour le Suivi d'Objets. Actes du Congrès ORASIS, 2005 (Fournol, France). [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
180. Sébastien Jodogne, Justus Piater, Apprentissage Interactif de Liaisons Directes entre Perceptions Visuelles et Actions. Actes du Congrès ORASIS, 2005 (Fournol, France). [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)
181. Fabien Scalzo, Justus Piater, Apprentissage non-supervisé de hiérarchies de caractéristiques visuelles. Actes du Congrès ORASIS, 2005 (Fournol, France). [\[Link\]](#) [\[BibTeX\]](#)
182. Sébastien Jodogne, Justus Piater, Reinforcement Learning of Perceptual Classes using Q Learning Updates. Proc. of the 23rd IASTED International Conference on Artificial Intelligence and Applications, pp. 445–450, 2005. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

183. Sébastien Jodogne, Justus Piater, Interactive Selection of Visual Features through Reinforcement Learning. [24th SGA International Conference on Innovative Techniques and Applications of Artificial Intelligence](#), pp. 285–298, 2004 (Cambridge, UK). Springer Research and Development in Intelligent Systems XXI.

© Springer-Verlag [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

184. Jean-Bernard Hayet, Justus Piater, Jacques Verly, Robust Incremental Rectification of Sport Video Sequences. Proceedings of the British Machine Vision Conference, pp. 687–696, 2004.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

185. Jean-Bernard Hayet, Justus Piater, Jacques Verly, Incremental Rectification of Sports Fields in Video Streams With Application to Soccer. *Advanced Concepts for Intelligent Vision Systems*, pp. 1-8, 2004. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
186. Raphaël Marée, Pierre Geurts, Justus Piater, Louis Wehenkel, A Generic Approach for Image Classification Based on Decision Tree Ensembles And Local Sub-Windows. [Proceedings of the Asian Conference on Computer Vision](#), pp. 860-865, 2004. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
187. Jacques Verly, Justus Piater, Marc Van Droogenbroeck, Jean-Jacques Embrechts, Signal and Image Exploitation at the University of Liège: Strategic Plan and Some Applications. *Journées d'Étude et Exposition, Optique et Vision Industrielle, 2004* (Organized by PromOptica and Bemeko, Université Catholique de Louvain). [\[Link\]](#) [\[BibTeX\]](#)

188. Robert Platt, Oliver Brock, Andrew Fagg, Deepak Karupiah, Michael Rosenstein, Jefferson Coelho, Manfred Huber, Justus Piater, David Wheeler, Roderic Grupen, A Framework For Humanoid Control and Intelligence. Proceedings of the IEEE International Conference on Humanoid Robots, 2003. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

189. Raphaël Marée, Pierre Geurts, Justus Piater, Louis Wehenkel, Giorgio Visimberga, A Comparison of Generic Machine Learning Algorithms for Image Classification. [23rd SGAI International Conference on Innovative Techniques and Applications of Artificial Intelligence](#), pp. 169–182, 2003. Springer Research and Development in Intelligent Systems XX. © Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

190. Pierre Gabriel, Justus Piater, Jacques Verly, Tracking of Objects in Video Streams Using Points of Interest. URSI Forum, p. 40, 2003. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

191. Pierre Gabriel, Jacques Verly, Justus Piater, André Genon, The State of the Art in Multiple Object Tracking Under Occlusion in Video Sequences. *Advanced Concepts for Intelligent Vision Systems*, pp. 166–173, 2003. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

192. James Crowley, Olivier Riff, Justus Piater, Fast Computation of Characteristic Scale Using a Half-Octave Pyramid. *Cognitive Vision Workshop*, 2002 (ETH Zürich). [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

193. Justus Piater, Roderic Grupen, Learning Appearance Features to Support Robotic Manipulation. *Cognitive Vision Workshop*, 2002 (ETH Zürich). [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

194. Justus Piater, James Crowley, Event-based Activity Analysis in Live Video Using a Generic Object Tracker. *Proceedings of the Third IEEE International Workshop on Performance Evaluation of Tracking and Surveillance*, pp. 1–8, 2002. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

195. Justus Piater, James Crowley, Multi-Modal Tracking of Interacting Targets Using Gaussian Approximations. *Proceedings of the Second IEEE International Workshop on Performance Evaluation of Tracking and Surveillance*, 2001. © IEEE [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

196. Jefferson Coelho, Justus Piater, Roderic Grupen, Developing Haptic and Visual Perceptual Categories for Reaching and Grasping with a Humanoid Robot. *Proceedings of the IEEE International Conference on Humanoid Robots*, 2000. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

197. Justus Piater, Roderic Grupen, Feature Learning for Recognition With Bayesian Networks. *Proceedings of the International Conference on Pattern Recognition*, pp. 17–20, 2000.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

198. Justus Piater, Learning Visual Features to Recommend Grasp Configurations. ICML-2000 Workshop on Machine Learning of Spatial Knowledge, 2000. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
199. Justus Piater, Roderic Grupen, Constructive Feature Learning and the Development of Visual Expertise. Proceedings of the Seventeenth International Conference on Machine Learning, pp. 751–758, 2000. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
200. Justus Piater, Roderic Grupen, Distinctive Features Should Be Learned. International Conference on Biologically Motivated Computer Vision, pp. 52–61, 2000. Springer [LNCS](#) 1811.

© Springer-Verlag [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

201. Justus Piater, Roderic Grupen, Krithi Ramamritham, Learning Real-Time Stereo Vergence Control. Proceedings of the 14th IEEE International Symposium on Intelligent Control, pp. 272–277, 1999 (Cambridge, MA).

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

202. Justus Piater, Roderic Grupen, Toward Learning Visual Discrimination Strategies. Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, pp. 410-415, 1999.

© IEEE [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]

203. Justus Piater, Roderic Grupen, A Framework For Learning Visual Discrimination. Proceedings of the 12th International FLAIRS Conference, pp. 84-88, 1999. [[Link](#)] [[PDF](#)] [[Abstract](#)] [[BibTeX](#)]
204. Justus Piater, Adriana Mincheva, Building Pixel Classifiers Using the Interactive Teacher/Learner (ITL) System. Proceedings of the IEEE Workshop on Applications of Computer Vision, pp. 252-253, 1998.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

205. Justus Piater, Paul Cohen, Xiaoqin Zhang, Michael Atighetchi, A Randomized ANOVA Procedure For Comparing Performance Curves. Machine Learning: Proceedings of the Fifteenth International Conference, pp. 430–438, 1998. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
206. Justus Piater, Edward Riseman, Paul Utgoff, Interactive Training of Pixel Classifiers Opens New Possibilities. Proceedings of the ISPRS ComIII Symposium on Object Recognition and Scene Classification from Multispectral and Multisensor Pixels, pp. 473–478, 1998. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
207. Justus Piater, Edward Riseman, Paul Utgoff, Interactively Training Pixel Classifiers. [Proceedings of the 11th International FLAIRS Conference](#), pp. 57–61, 1998. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

Abstracts

1. Henri-Jacques Geiss, Alejandro Agostini, Ingmar Posner, Justus Piater, Presentation: Sparsity Regularisation for Sample Efficient Learning of Symbolic Planning Operators. [The 9th Image Schema Day](#), 2025. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
2. Henri-Jacques Geiss, Alejandro Agostini, Justus Piater, Position Talk: Building a Curious Agent that Learns to Plan with Image Schemas. [The 8th Image Schema Day ISD8@AI*IA](#), 2024. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
3. Andrea Portscher, Raphael Angerbauer, Abudaker Ibrahim, Simon Feuerstein, Kristin Egger, Elisabeth Brandauer, M. Bergmann, Birgit Högl, Ambra Stefani, Antonio Rodríguez-Sánchez, Matteo Cesari, A machine learning algorithm to predict short-term phenoconversion from polysomnography in isolated REM sleep behavior disorder. [Sleep Medicine](#), pp. S300–S301, 2024. Extended Abstract.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

4. Hector Perez-Villeda, Matteo Saveriano, Justus Piater, Trajectory Adaptation from Demonstrations with Constrained Optimization. [Austrian Robotics Workshop](#), pp. 59–60, 2022. Best Poster Award. Extended Abstract.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

5. Sayantan Auddy, Jakob Hollenstein, Matteo Saveriano, Antonio Rodríguez-Sánchez, Justus Piater, Continual Learning Benchmarks for Antipodal Grasping. Austrian Robotics Workshop, Villach, Austria , 2022. Extended Abstract.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

6. Genanro Notomista, Matteo Saveriano, On the Safety of Dynamical Systems with Multiple Non-Convex Unsafe Sets. International Workshop on Human-Friendly Robotics, 2021. Extended Abstract. [\[Link\]](#) [\[BibTeX\]](#)

7. Jakob Hollenstein, Erwan Renaudo, Saveriano Matteo, Justus Piater, How does explicit exploration influence Deep Reinforcement Learning?. [Joint Austrian Computer Vision and Robotics Workshop](#), pp. 29–30, 2020. Extended Abstract.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

8. Jakob Hollenstein, Justus Piater, Evaluating Planning for Policy Search. [1st Workshop on Workshop on Closing the Reality Gap in Sim2real Transfer for Robotic Manipulation](#), 2019. Extended Abstract.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

9. Lars Jensen, Kerstin Fischer, Franziska Kirstein, Dadhichi Shukla, Özgür Erkent, Justus Piater, It Gets Worse Before it Gets Better; Timing of Instructions in Close Human-Robot Collaboration. [12th ACM/IEEE International Conference on Human-Robot Interaction](#), 2017. Extended Abstract.

© ACM [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

10. Philipp Zech, Justus Piater, Mitigating Uncertainty by Learning to Grasp Under Blindness. *Robotics in the 21st century: Challenges and Promises*, 2016. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
11. Wail Mustafa, Mirko Wächter, Sandor Szedmak, Alejandro Agostini, Dirk Kraft, Tamim Asfour, Justus Piater, Florentin Wörgötter, Norbert Krüger, Affordance Estimation For Vision-Based Object Replacement on a Humanoid Robot. 47th International Symposium on Robotics, 2016. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)
12. Senka Krivic, Michael Cashmore, Bram Ridder, Justus Piater, Initial State Prediction in Planning. UK Planning and Scheduling Special Interest Group (PlanSIG 2015), 2016. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

13. Senka Krivic, Emre Ugur, Justus Piater, Acting on Push Affordances: Adapting Dynamic Movement Primitives Based on Object Behaviour. [Learning Object Affordances: a fundamental step to allow prediction, planning and tool use?](#), 2015 (Workshop at IROS). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

14. Dadhichi Shukla, Özgür Erkent, Justus Piater, The IMHG dataset: A Multi-View Hand Gesture RGB-D Dataset for Human-Robot Interaction. [Towards Standardized Experiments in Human Robot Interactions](#), 2015 (Workshop at IROS). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

15. Emre Ugur, Jimmy Baraglia, Lars Schillingmann, Yukie Nagai, Use of speech and motion cues for bootstrapping complex action learning in iCub. 5th International Conference on Development and Learning and on Epigenetic Robotics, pp. 84–85, 2015. Extended Abstract.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

16. Manuel Lopes, Jan Peters, Justus Piater, Marc Toussaint, Andrea Baisero, Baptiste Busch, Özgür

Erkent, Oliver Kroemer, Rudolf Lioutikov, Guilherme Maeda, Yoan Mollard, Thibaut Munzer, Dadhichi Shukla, Semi-Autonomous 3rd-Hand Robot. [Cognitive Robotics in future manufacturing scenarios](#), 2015 (Workshop at the European Robotics Forum, Vienna, Austria). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

17. Lars Jensen, Kerstin Fischer, Dadhichi Shukla, Justus Piater, Negotiating Instruction Strategies during Robot Action Demonstration. [10th ACM/IEEE International Conference on Human-Robot Interaction](#), pp. 143–144, 2015. Extended Abstract.

© ACM [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

18. Franziska Kirstein, Kerstin Fischer, Özgür Erkent, Justus Piater, Human Smile Distinguishes between Collaborative and Solitary Tasks in Human-Robot Interaction. [10th ACM/IEEE International Conference on Human-Robot Interaction](#), pp. 145–146, 2015. Extended Abstract.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

19. Simon Hangl, Emre Ugur, Justus Piater, Generalizing autonomously segmented complex trajectories based on learned task-specific environment metrics. [Workshop on Robot Manipulation: What has been achieved and what remains to be done?](#), 2014 (Workshop at IROS 2014). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

20. Safoura Rezapour-Lakani, Mirela Popa, Antonio J. Rodríguez-Sánchez, Justus Piater, Scale-Invariant, Unsupervised Part Decomposition of 3D Objects. [Parts and Attributes](#), 2014 (Workshop at ECCV). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

21. George Azzopardi, Antonio Rodríguez-Sánchez, Justus Piater, Nicolai Petkov, A computational model of push-pull inhibition of simple cells with application to contour detection. [Perception ECVF Abstract Supplement](#), p. 163, 2014 (European Conference on Visual Perception). Extended Abstract. [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

22. Thiusius R. Savarimuthu, Anders G. Buch, Yang Yang, Simon Haller, Jeremie Papon, David Martínez, Eren Aksoy, Manipulation Monitoring and Robot Intervention in Complex Manipulation Sequences. [Workshop on Robotic Monitoring](#), 2014 (Workshop at RSS). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

23. Hanchen Xiong, Sandor Szedmak, Justus Piater, Comparing Binary Hamiltonian Monte Carlo and Gibbs Sampling for Training Discrete MRFs with Stochastic Approximation. [Seventeenth International Conference on Artificial Intelligence and Statistics](#), 2014. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

24. Alexander Rietzler, Renaud Detry, Marek Kopicki, Jeremy Wyatt, Justus Piater, Inertially-safe Grasping Of Novel Objects. [Cognitive Robotics Systems Workshop](#), 2013 (Workshop at IROS). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

25. Damien Teney, Dadhichi Shukla, Justus Piater, Markerless Self-Recognition and Segmentation of Robotic Manipulator in Still Images. [Mobile Manipulation Workshop on Interactive Perception](#), 2013 (Workshop at ICRA). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

26. Renaud Detry, Justus Piater, Grasp Generalization Via Predictive Parts. [Austrian Robotics Workshop](#), 2011. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

27. Benedikt Hupfaut, Heiko Hahn, Leon Bodenhausen, Dirk Kraft, Norbert Krüger, Justus Piater, Grasp Densities for Grasp Refinement in Industrial Bin Picking. [Workshop on Uncertainty in Automation](#), 2011 (Workshop at ICRA). Abstract. [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

28. Norbert Krüger, Justus Piater, Christopher Geib, Mark Steedman, Florentin Wörgötter, Aleš Ude, Tamim Asfour, Rüdiger Dillmann, Object-Action Complexes: Grounded Abstractions of Sensorimotor Processes. [4th International Conference on Cognitive Systems](#), 2010. Abstract. [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

29. Renaud Detry, Mila Popović, Emre Başeski, Norbert Krüger, Justus Piater, Autonomous Learning of Object-specific Grasp Affordance Densities. [Approaches to Sensorimotor Learning on Humanoid Robots](#), 2009 (Workshop at the IEEE International Conference on Robotics and Automation). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

30. Justus Piater, Renaud Detry, 3D Probabilistic Representations for Vision and Action. [Robotics Challenges for Machine Learning II](#), 2008 (Workshop at the IEEE/RSJ International Conference on Intelligent Robots and Systems). Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

31. Justus Piater, Fabien Scalzo, Renaud Detry, Vision as Inference in a Hierarchical Markov Network. [Twelfth International Conference on Cognitive and Neural Systems](#), 2008. Extended Abstract. [\[Link\]](#) [\[PDF\]](#) [\[BibTeX\]](#)

Non Peer-Reviewed Articles

1. Alejandro Agostini, Justus Piater, Unified Task and Motion Planning using Object-centric Abstractions of Motion Constraints. [arXiv:2312.17605](https://arxiv.org/abs/2312.17605), 2023.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

2. Sayantan Auddy, Jakob Hollenstein, Matteo Saveriano, Antonio Rodríguez-Sánchez, Justus Piater, Scalable and Efficient Continual Learning from Demonstration via Hypernetwork-generated Stable Dynamics Model. [arXiv:2311.03600](https://arxiv.org/abs/2311.03600), 2023.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

3. Josef Gugglberger, David Peer, Antonio Rodríguez-Sánchez, Training Deep Capsule Networks with Residual Connections. [arXiv:2104.07393](#), 2021.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

4. David Peer, Sebastian Stabinger, Antonio Rodríguez-Sánchez, Auto-tuning of Deep Neural Networks by Conflicting Layer Removal. [arXiv:2103.04331](#), 2021.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

5. Xiang Zhang, Matteo Saveriano, Justus Piater, Learning Descriptor of Constrained Task from Demonstration. [arXiv:2103.09465](#), 2021.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

6. Jakob Hollenstein, Erwan Renaudo, Matteo Saveriano, Justus Piater, Improving the Exploration of Deep Reinforcement Learning in Continuous Domains using Planning for Policy Search. [arXiv:2010.12974](#), 2020.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

7. David Peer, Sebastian Stabinger, Antonio Rodríguez-Sánchez, Increasing the adversarial robustness and explainability of capsule networks with gamma-capsules. [arXiv:1812.09707](#), 2019.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

8. Xiang Zhang, Athanasios Polydoros, Justus Piater, Learning Movement Assessment Primitives for Force Interaction Skills. [arXiv:1805.04354](https://arxiv.org/abs/1805.04354), 2018.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

9. Simon Hangl, Andreas Mennel, Justus Piater, A novel Skill-based Programming Paradigm based on Autonomous Playing and Skill-centric Testing. [arXiv:1709.06049](#), 2017.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

10. Simon Hangl, Vedran Dunjko, Hans Briegel, Justus Piater, Skill Learning by Autonomous Robotic Playing using Active Learning and Creativity. [arXiv:1706.08560](#), 2017.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

11. Philipp Zech, Hanchen Xiong, Justus Piater, Active and Transfer Learning of Grasps by Kernel Adaptive MCMC. [arXiv:1611.06368](#), 2016.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

12. Philipp Zech, Justus Piater, Active and Transfer Learning of Grasps by Sampling from Demonstration. [arXiv:1611.06367](https://arxiv.org/abs/1611.06367), 2016.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

13. Philipp Zech, Justus Piater, Grasp Learning by Sampling From Demonstration. [arXiv:1611.06366](#), 2016.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

Theses and Dissertations

1. Sayantan Auddy, Continual learning for robotic manipulation. PhD Thesis, Department of Computer Science, University of Innsbruck, 2024. [\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
2. Jakob Hollenstein, Noise and planning : improving exploration in continuous control deep reinforcement learning. PhD Thesis, Department of Computer Science, University of Innsbruck, 2024. [\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
3. David Peer, Enhancing the learnability of deep gradient descent-based learning. PhD Thesis, Department of Computer Science, University of Innsbruck, 2022. [\[Home\]](#) [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

4. Sebastian Stabinger, Deep learning for abstract classification tasks. PhD Thesis, Department of Computer Science, University of Innsbruck, 2022. [\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
5. Simon Hangl, Autonomous robotics : an integrated approach from controllers to cognitive capabilities . PhD Thesis, Department of Computer Science, University of Innsbruck, 2019. [\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
6. Senka Krivić, Predictive models for robot nonprehensile manipulation and planning. PhD Thesis, Department of Computer Science, University of Innsbruck, 2019. [\[Link\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
7. Dadhichi Shukla, Technologies and paradigms for natural human-robot collaboration. PhD Thesis, Department of Computer Science, University of Innsbruck, 2018. [\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
8. Safoura Rezapour Lakani, Affordance-driven visual object representation. PhD Thesis, Department of Computer Science, University of Innsbruck, 2018. [\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
9. Hanchen Xiong, Inference, Learning and Optimization on Structured Domains: Methods and Applications. PhD Thesis, Department of Computer Science, University of Innsbruck, 2015. [\[Home\]](#) [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
10. Damien Teney, Probabilistic Models of Visual Appearance For Object Identity, Class, and Pose Inference. PhD Thesis, Université de Liège, Liège, Belgique, 2013.

[\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)

11. Justus Piater, Visual Feature Learning. Doctoral Dissertation, Computer Science Department, University of Massachusetts Amherst, 2001. [\[Link\]](#) [\[PDF\]](#) [\[Abstract\]](#) [\[BibTeX\]](#)
12. Justus Piater, Ein adaptives Verfahren zur Bestimmung der Wellen früher auditorisch evozierter Potentiale mittels unscharfer Mengen. M.Sc. Thesis, Computer Science Department, University of Magdeburg, 1994. [\[Link\]](#) [\[BibTeX\]](#)

The copyright of many of the above publications is owned by their respective publishers. By downloading material from this site, you agree to abide by the applicable obligations. Downloadable versions are not necessarily identical to the published versions. They are made available here for personal use only.

Some publishers require the following copyright notices, respectively:

- **Elsevier:** NOTICE: this is the author's version of a work that was accepted for publication in *the given journal*. Changes resulting from the publishing process, such as peer review, editing, corrections, structural formatting, and other quality control mechanisms may not be reflected in this document. Changes may have been made to this work since it was submitted for publication. A definitive version was subsequently published as *given in the reference*.
- **IEEE:** © IEEE. Personal use of this material is permitted. Permission from IEEE must be obtained for all other uses, in any current or future media, including reprinting/republishing this material for advertising or promotional purposes, creating new collective works, for resale or redistribution to servers or lists, or reuse of any copyrighted components of this work in other works.
- **Information Processing Society of Japan:** Notice for the use of this material: The copyright of this material is retained by the [Information Processing Society of Japan](#) (IPSJ). This material is published on this web page with the agreement of the author(s) and the IPSJ. Please comply with the Copyright Law of Japan and the Code of Ethics of IPSJ if any users wish to reproduce, make derivative work, distribute or make available to the public any part or whole thereof. All Rights Reserved, Copyright (C) Information Processing Society of Japan. ([Source](#))
- **Springer and Versita/Springer:** The final publication is available at link.springer.com.

From:

<https://iis.uibk.ac.at/> - IIS

Permanent link:

<https://iis.uibk.ac.at/publications>

Last update: **2019/08/06 09:59**

