

Raphael Memmesheimer, Dr. rer. nat.

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Work Experience

- **Autonomous Intelligent Systems, University of Bonn** 2022 –
Postdoctoral Researcher
- **Active Vision Working Group, University of Koblenz-Landau** 2016 – 2022
Research Associate
- **Active Vision Working Group, University of Koblenz-Landau** 2012 – 2016
Research Assistant
- **Clasen Datensysteme GmbH** 2006 – 2012
Software Engineer

Education

- **Dr. rer. nat. (Ph.D.), University of Koblenz-Landau** Computer Science 2016 – 2022
magna cum laude
Thesis title: *On the recognition of human activities and the evaluation of its imitation by robotic systems*
Mentors: Prof. Dr. Dietrich Paulus.
- **M.Sc. Computational Visualistics, University of Koblenz-Landau** 2015 – 2016
Grade: 1.4, high distinction
Mentors: Prof. Dr. Dietrich Paulus, Dipl. Inform. Nicolai Wojke.
- **B.Sc. Computational Visualistics** 2010 – 2015
Grade: 2.2, good
Mentors: Prof. Dr. Dietrich Paulus, Dipl. Inform. Viktor Seib.

Research Stays

- **Intelligent Robots and Systems group (IRSg), Instituto Superior Técnico (IST)** 07/2018 – 10/2018
Lisbon, Portugal.

Research Publications

Journal Articles

- 1 E. Kruzhkov, **R. Memmesheimer**, and S. Behnke, "OMCL: Open-vocabulary monte carlo localization," *IEEE Robotics and Automation Letters (RAL)*, 2026. [DOI: 10.1109/lra.2026.3653333](#).
- 2 C. Lenz, M. Schwarz, A. Rochow, B. Pätzold, **R. Memmesheimer**, M. Schreiber, and S. Behnke, "NimbRo wins ANA avatar XPRIZE immersive telepresence competition: Human-centric evaluation and lessons learned," *Int. J. Soc. Robotics*, vol. 17, no. 3, pp. 337–361, 2025. [DOI: 10.1007/S12369-023-01050-9](#).
- 3 M. A. Roa, M. R. Dogar, J. Pagès, C. Vivas, A. Morales, N. Correll, M. Görner, J. Rosell, S. Foix, **R. Memmesheimer**, and F. Ferro, "Mobile manipulation hackathon: Moving into real world applications," *IEEE Robotics Autom. Mag.*, vol. 28, no. 2, pp. 112–124, 2021, ISSN: 1070-9932. [DOI: 10.1109/MRA.2021.3061951](#).

Conference Proceedings

- 1 J. Bode, **R. Memmesheimer**, and S. Behnke, "El3dd: Extended latent 3d diffusion for language conditioned multitask manipulation," in *Accepted for European Robotics Forum (ERF), Stavanger, Norway, March 2026, 2026*.

- 2 S. Bultmann, **R. Memmesheimer**, J. Nogga, J. Hau, and S. Behnke, "Anticipating human behavior for safe navigation and efficient collaborative manipulation with mobile service robots," in *2026 IEEE/SICE International Symposium on System Integration, SII*, IEEE, 2026, pp. 1071–1078. [DOI: 10.1109/SII64115.2026.11404618](#).
- 3 **R. Memmesheimer**, D. Pavlichenko, E. Kruzhkov, J. Bode, F. Schilke, V. Tutevych, C. Lenz, M. Schreiber, and S. Behnke, "Adaptive domestic service robotics through foundation models for perception, interaction, and action," in *Proceedings of the 2nd German Robotics Conference (GRC) (Accepted for presentation)*, Cologne, Germany, Mar. 2026.
- 4 V. Tutevych, **R. Memmesheimer**, L. Eichler, D. Pavlichenko, F. Schilke, R. Krudewig, and S. Behnke, "Efficient image annotation via semi-supervised object segmentation with label propagation," in *RoboCup 2026: Robot World Cup (Accepted for publication)*, 2026.
- 5 S. Bultmann, **R. Memmesheimer**, J. Nogga, J. Hau, and S. Behnke, "Anticipating human behavior for safe and efficient collaborative mobile manipulation," in *Proceedings of the 1st German Robotics Conference (GRC) (Accepted for presentation)*, Nuremberg, Germany, Mar. 2025.
- 6 V. Schönbach, M. Wiedemann, **R. Memmesheimer**, M. Mosbach, and S. Behnke, "Integration of the tiago robot into isaac sim with mecanum drive modeling and learned s-curve velocity profiles," in *2025 IEEE 21st International Conference on Automation Science and Engineering (CASE)*, IEEE, 2025. [DOI: 10.1109/case58245.2025.11163930](#).
- 7 S. Seljunina, A. Otepleko, **R. Memmesheimer**, and S. Behnke, "Person segmentation and action classification for multi-channel hemisphere field of view lidar sensors," in *IEEE/SICE International Symposium on System Integration, SII 2025, Munich, Germany, January 21-24, 2025*, IEEE, 2025, pp. 817–822. [DOI: 10.1109/SII59315.2025.10871131](#).
- 8 Y. Wang, **R. Memmesheimer**, and S. Behnke, "LIAM: multimodal transformer for language instructions, images, actions and semantic maps," in *19th International Conference on Intelligent Autonomous Systems (IAS) (Accepted for publication)*, 2025.
- 9 J. Bode, B. Pätzold, **R. Memmesheimer**, and S. Behnke, "A comparison of prompt engineering techniques for task planning and execution in service robotics," in *23rd IEEE-RAS International Conference on Humanoid Robots, Humanoids 2024, Nancy, France, November 22-24, 2024*, IEEE, 2024, pp. 309–314. [DOI: 10.1109/HUMANOIDS58906.2024.10769825](#).
- 10 **R. Memmesheimer**, C. Lenz, M. Schwarz, M. Schreiber, and S. Behnke, "Self-centering 3-dof feet controller for hands-free locomotion control in telepresence and virtual reality," in *2024 IEEE Conference on Telepresence*, IEEE, 2024, pp. 57–60. [DOI: 10.1109/Telepresence63209.2024.10841525](#).
- 11 **R. Memmesheimer**, J. Nogga, B. Pätzold, E. Kruzhkov, S. Bultmann, M. Schreiber, J. Bode, B. Karacora, J. Park, A. Savinykh, and S. Behnke, "Robocup@home 2024 OPL winner NimbRo: Anthropomorphic service robots using foundation models for perception and planning," in *RoboCup 2024: Robot World Cup XXVII*, E. Barros, J. P. Hanna, H. Okada, and E. Torta, Eds., ser. Lecture Notes in Computer Science, vol. 15570, Springer, 2024, pp. 515–527. [DOI: 10.1007/978-3-031-85859-8_44](#).
- 12 **R. Memmesheimer**, M. Overbeck, B. Kral, L. Steffen, S. Behnke, M. Gersch, and A. Roennau, "Cleaning robots in public spaces: A survey and proposal for benchmarking based on stakeholders interviews," in *RoboCup 2024: Robot World Cup XXVII*, E. Barros, J. P. Hanna, H. Okada, and E. Torta, Eds., ser. Lecture Notes in Computer Science, vol. 15570, Springer, 2024, pp. 373–385. [DOI: 10.1007/978-3-031-85859-8_32](#).
- 13 S. Bultmann, **R. Memmesheimer**, and S. Behnke, "External camera-based mobile robot pose estimation for collaborative perception with smart edge sensors," in *IEEE International Conference on Robotics and Automation, ICRA 2023, London, UK, May 29 - June 2, 2023*, IEEE, 2023, pp. 8194–8200. [DOI: 10.1109/ICRA48891.2023.10160892](#).
- 14 I. Germann, **R. Memmesheimer**, and D. Paulus, "Reduced skeleton representation for action recognition on graph convolutional neural networks," in *IEEE/SICE International Symposium on System Integration, SII 2023, Atlanta, GA, USA, January 17-20, 2023*, IEEE, 2023, pp. 1–5. [DOI: 10.1109/SII55687.2023.10039092](#).
- 15 I. Kramer, **R. Memmesheimer**, and D. Paulus, "Classification of pathological and healthy individuals for computer-aided physical rehabilitation," in *IEEE/SICE International Symposium on System Integration, SII 2023, Atlanta, GA, USA, January 17-20, 2023*, IEEE, 2023, pp. 1–6. [DOI: 10.1109/SII55687.2023.10039185](#).
- 16 B. Pätzold, A. Rochow, M. Schreiber, **R. Memmesheimer**, C. Lenz, M. Schwarz, and S. Behnke, "Audio-based roughness sensing and tactile feedback for haptic perception in telepresence," in *IEEE International Conference on*

Systems, Man, and Cybernetics, SMC 2023, Honolulu, Oahu, HI, USA, October 1-4, 2023, IEEE, 2023, pp. 1387–1392.
DOI: 10.1109/SMC53992.2023.10394062.

- 17 D. Pavlichenko, G. Ficht, A. Amini, M. Hosseini, **R. Memmesheimer**, A. Villar-Corrales, S. M. Schulz, M. Missura, M. Bennewitz, and S. Behnke, “RoboCup 2022 AdultSize Winner NimRo: Upgraded perception, capture steps gait and phase-based in-walk kicks,” in *RoboCup 2022: Robot World Cup XXV [Bangkok, Thailand, July 11-17, 2022]*, A. Eguchi, N. Lau, M. Paetzel-Prüsmann, and T. Wanichanon, Eds., ser. Lecture Notes in Computer Science, vol. 13561, Springer, 2023, pp. 240–252. DOI: 10.1007/978-3-031-28469-4_20.
- 18 M. Schwarz, C. Lenz, **R. Memmesheimer**, B. Pätzold, A. Rochow, M. Schreiber, and S. Behnke, “Robust immersive telepresence and mobile telemanipulation: NimRo wins ANA avatar XPRIZE finals,” in *22nd IEEE-RAS International Conference on Humanoid Robots, Humanoids 2023, Austin, TX, USA, December 12-14, 2023*, IEEE, 2023, pp. 1–8. DOI: 10.1109/HUMANOIDS57100.2023.10375179.
- 19 A. von Gladiss, I. Kramer, N. Theisen, **R. Memmesheimer**, A. C. Bakenecker, T. M. Buzug, and D. Paulus, “Data augmentation for training a neural network for image reconstruction in mpi,” in *International Workshop on Magnetic Particle Imaging*, 2022. DOI: 10.18416/IJMPI.2022.2203058.
- 20 **R. Memmesheimer**, S. Häring, N. Theisen, and D. Paulus, “Skeleton-dml: Deep metric learning for skeleton-based one-shot action recognition,” in *IEEE/CVF Winter Conference on Applications of Computer Vision, WACV 2022, Waikoloa, HI, USA, January 3-8, 2022*, IEEE, 2022, pp. 837–845, ISBN: 978-1-6654-0915-5. DOI: 10.1109/WACV51458.2022.00091.
- 21 M. Duhme, **R. Memmesheimer**, and D. Paulus, “Fusion-gcn: Multimodal action recognition using graph convolutional networks,” in *Pattern Recognition - 43rd DAGM German Conference, DAGM GCPR 2021, Bonn, Germany, September 28 - October 1, 2021, Proceedings*, C. Bauckhage, J. Gall, and A. G. Schwing, Eds., ser. Lecture Notes in Computer Science, vol. 13024, Springer, 2021, pp. 265–281, ISBN: 978-3-030-92659-5. DOI: 10.1007/978-3-030-92659-5_17.
- 22 S. Häring, **R. Memmesheimer**, and D. Paulus, “Action segmentation on representations of skeleton sequences using transformer networks,” in *2021 IEEE International Conference on Image Processing, ICIP 2021, Anchorage, AK, USA, September 19-22, 2021*, IEEE, 2021, pp. 3053–3057, ISBN: 978-1-6654-4115-5. DOI: 10.1109/ICIP42928.2021.9506687.
- 23 I. Kramer, **R. Memmesheimer**, and D. Paulus, “Customer interaction of a future convenience store with a mobile manipulation service robot,” in *2021 IEEE International Conference on Omni-Layer Intelligent Systems, COINS 2021, Barcelona, Spain, August 23-25, 2021*, IEEE, 2021, pp. 1–7, ISBN: 978-1-6654-3157-6. DOI: 10.1109/COINS51742.2021.9524229.
- 24 **R. Memmesheimer**, I. Kramer, V. Seib, N. Theisen, and D. Paulus, “Robotic imitation by markerless visual observation and semantic associations,” in *2020 IEEE International Conference on Autonomous Robot Systems and Competitions, ICARSC 2020, Ponta Delgada, Portugal, April 15-17, 2020*, IEEE, 2020, pp. 275–280, ISBN: 978-1-7281-7079-4. DOI: 10.1109/ICARSC49921.2020.9096123.
- 25 **R. Memmesheimer**, N. Theisen, and D. Paulus, “Gimme signals: Discriminative signal encoding for multimodal activity recognition,” in *IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2020, Las Vegas, NV, USA, October 24, 2020 - January 24, 2021*, IEEE, 2020, pp. 10 394–10 401, ISBN: 978-1-7281-6213-3. DOI: 10.1109/IROS45743.2020.9341699.
- 26 **R. Memmesheimer**, N. Theisen, and D. Paulus, “SL-DML: signal level deep metric learning for multimodal one-shot action recognition,” in *25th International Conference on Pattern Recognition, ICPR 2020, Virtual Event / Milan, Italy, January 10-15, 2021*, IEEE, 2020, pp. 4573–4580. DOI: 10.1109/ICPR48806.2021.9413336.
- 27 I. Kramer, N. Schmidt, **R. Memmesheimer**, and D. Paulus, “Evaluation of physical therapy through analysis of depth images,” in *28th IEEE International Conference on Robot and Human Interactive Communication, RO-MAN 2019, New Delhi, India, October 14-18, 2019*, IEEE, 2019, pp. 1–6, ISBN: 1944-9445. DOI: 10.1109/RO-MAN46459.2019.8956435.
- 28 **R. Memmesheimer**, I. Kramer, V. Seib, and D. Paulus, “Simitate: A hybrid imitation learning benchmark,” in *2019 IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS 2019, Macau, SAR, China, November 3-8, 2019*, IEEE, 2019, pp. 5243–5249, ISBN: 978-1-7281-4004-9. DOI: 10.1109/IROS40897.2019.8968029.
- 29 **R. Memmesheimer**, I. Kuhlmann, M. Mints, P. Schmidt, C. Korbach, I. Germann, and D. Paulus, “Scratchy: A lightweight modular autonomous robot for robotic competitions,” in *2019 IEEE International Conference on*

Autonomous Robot Systems and Competitions, ICARSC 2019, Porto, Portugal, April 24-26, 2019, L. Almeida, L. P. Reis, and A. P. Moreira, Eds., IEEE, 2019, pp. 1–6, ISBN: 978-1-7281-3558-8. [DOI: 10.1109/ICARSC.2019.8733655](https://doi.org/10.1109/ICARSC.2019.8733655).

- 30 **R. Memmesheimer**, V. Seib, T. Evers, D. Müller, and D. Paulus, “Adaptive learning methods for autonomous mobile manipulation in robocup@home,” in *RoboCup 2019: Robot World Cup XXIII [Sydney, NSW, Australia, July 8, 2019]*, S. K. Chalup, T. Niemüller, J. Suthakorn, and M. Williams, Eds., ser. Lecture Notes in Computer Science, vol. 11531, Springer, 2019, pp. 565–577, ISBN: 978-3-030-35699-6. [DOI: 10.1007/978-3-030-35699-6_46](https://doi.org/10.1007/978-3-030-35699-6_46).
- 31 P. Schneider, **R. Memmesheimer**, I. Kramer, and D. Paulus, “Gesture recognition in RGB videos using human body keypoints and dynamic time warping,” in *RoboCup 2019: Robot World Cup XXIII [Sydney, NSW, Australia, July 8, 2019]*, S. K. Chalup, T. Niemüller, J. Suthakorn, and M. Williams, Eds., ser. Lecture Notes in Computer Science, vol. 11531, Springer, 2019, pp. 281–293, ISBN: 978-3-030-35699-6. [DOI: 10.1007/978-3-030-35699-6_22](https://doi.org/10.1007/978-3-030-35699-6_22).
- 32 M. Matamoros, V. Seib, **R. Memmesheimer**, and D. Paulus, “Robocup@home: Summarizing achievements in over eleven years of competition,” in *2018 IEEE International Conference on Autonomous Robot Systems and Competitions, ICARSC 2018, Torres Vedras, Portugal, April 25-27, 2018*, H. Costelha, J. M. F. Calado, L. C. Bento, N. Lopes, and P. Oliveira, Eds., IEEE, 2018, pp. 186–191. [DOI: 10.1109/ICARSC.2018.8374181](https://doi.org/10.1109/ICARSC.2018.8374181).
- 33 **R. Memmesheimer**, I. Mykhalchyshyna, and D. Paulus, “Gesture recognition on human pose features of single images,” in *9th IEEE International Conference on Intelligent Systems, IS 2018, Funchal, Madeira, Portugal, September 25-27, 2018*, R. Jardim-Gonçalves, J. P. Mendonça, V. Jotsov, M. Marques, J. Martins, and R. E. Bierwolf, Eds., IEEE, 2018, pp. 813–819, ISBN: 1541-1672. [DOI: 10.1109/IS.2018.8710515](https://doi.org/10.1109/IS.2018.8710515).
- 34 **R. Memmesheimer**, I. Mykhalchyshyna, V. Seib, T. Evers, and D. Paulus, “Homer@unikoblenz: Winning team of the robocup@home open platform league 2018,” in *RoboCup 2018: Robot World Cup XXII [Montreal, QC, Canada, June 18-22, 2018]*, D. Holz, K. Genter, M. Saad, and O. von Stryk, Eds., ser. Lecture Notes in Computer Science, vol. 11374, Springer, 2018, pp. 512–523, ISBN: 978-3-030-27543-3. [DOI: 10.1007/978-3-030-27544-0_42](https://doi.org/10.1007/978-3-030-27544-0_42).
- 35 **R. Memmesheimer**, V. Seib, and D. Paulus, “Homer@unikoblenz: Winning team of the robocup@home open platform league 2017,” in *RoboCup 2017: Robot World Cup XXI [Nagoya, Japan, July 27-31, 2017]*, H. Akiyama, O. Obst, C. Sammut, and F. Tonidandel, Eds., ser. Lecture Notes in Computer Science, vol. 11175, Springer, 2017, pp. 509–520, ISBN: 978-3-030-00308-1. [DOI: 10.1007/978-3-030-00308-1_42](https://doi.org/10.1007/978-3-030-00308-1_42).
- 36 A. Vanzo, L. Iocchi, D. Nardi, **R. Memmesheimer**, D. Paulus, I. Ivanovska, and G. K. Kraetzschmar, “Benchmarking speech understanding in service robotics,” in *Proceedings of the 4th Italian Workshop on Artificial Intelligence and Robotics A workshop of the XVI International Conference of the Italian Association for Artificial Intelligence (AI*IA 2017), Bari, Italy, November 14-15, 2017*, S. M. Anzalone, A. Farinelli, A. Finzi, and F. Mastrogiovanni, Eds., ser. CEUR Workshop Proceedings, vol. 2054, CEUR-WS.org, 2017, pp. 34–40. [URL: https://ceur-ws.org/Vol-2054/paper6.pdf](https://ceur-ws.org/Vol-2054/paper6.pdf).
- 37 N. Wojke, **R. Memmesheimer**, and D. Paulus, “Joint operator detection and tracking for person following from mobile platforms,” in *20th International Conference on Information Fusion, FUSION 2017, Xi’an, China, July 10-13, 2017*, IEEE, 2017, pp. 1–8. [DOI: 10.23919/ICIF.2017.8009746](https://doi.org/10.23919/ICIF.2017.8009746).
- 38 V. Seib, S. Manthe, **R. Memmesheimer**, F. Polster, and D. Paulus, “Team homer@unikoblenz - approaches and contributions to the robocup@home competition,” in *RoboCup 2015: Robot World Cup XIX [papers from the 19th Annual RoboCup International Symposium, Hefei, China, July 23, 2015]*, L. Almeida, J. Ji, G. Steinbauer, and S. Luke, Eds., ser. Lecture Notes in Computer Science, vol. 9513, Springer, 2015, pp. 83–94. [DOI: 10.1007/978-3-319-29339-4_7](https://doi.org/10.1007/978-3-319-29339-4_7).
- 39 V. Seib, **R. Memmesheimer**, and D. Paulus, “Ensemble classifier for joint object instance and category recognition on RGB-D data,” in *2015 IEEE International Conference on Image Processing, ICIP 2015, Quebec City, QC, Canada, September 27-30, 2015*, IEEE, 2015, pp. 143–147. [DOI: 10.1109/ICIP.2015.7350776](https://doi.org/10.1109/ICIP.2015.7350776).

Books and Chapters

- 1 A. von Gladiss, **R. Memmesheimer**, N. Theisen, A. C. Bakenecker, T. M. Buzug, and D. Paulus, “Reconstruction of 1d images with a neural network for magnetic particle imaging,” in *Bildverarbeitung für die Medizin 2022 - Proceedings, German Workshop on Medical Image Computing, Heidelberg, June 26-28, 2022*, ser. Informatik Aktuell, K. H. Maier-Hein, T. M. Deserno, H. Handels, A. Maier, C. Palm, and T. Tolxdorff, Eds., Springer, 2022, pp. 247–252. [DOI: 10.1007/978-3-658-36932-3_52](https://doi.org/10.1007/978-3-658-36932-3_52).







- 2 V. Seib, **R. Memmesheimer**, and D. Paulus, “A ROS-based system for an autonomous service robot,” in *Robot Operating System (ROS): The Complete Reference (Volume 1)*, ser. Studies in Computational Intelligence, A. Koubaa, Ed., vol. 625, Heidelberg: Springer, Mar. 2016, pp. 215–252, ISBN: 978-3-319-26054-9. [DOI: 10.1007/978-3-319-26054-9_9](#).

Preprints

- 1 C. Korbach, M. D. Solbach, **R. Memmesheimer**, D. Paulus, and J. K. Tsotsos, “Next-best-view estimation based on deep reinforcement learning for active object classification,” *arXiv preprint arXiv:2110.06766*, 2021.








Awards

Robotic Competitions

 1st  2nd  3rd  National  European  International

- **Placed 3rd in @Home Open Platform League, Best Poster Award, Best in Class General Purpose Service Robot RoboCup World Cup, Inchecon, South Korea.**   2026
- **Placed 1st in @Home League RoboCup German Open, Cologne.**  
- **Placed 2nd in @Home Open Platform League, Best Poster Award RoboCup World Cup, Salvador, Brazil.**   2025
- **Placed 1st in @Home League RoboCup German Open, Nuremberg.**  
- **Placed 1st in @Home Open Platform League (World Champion), Waitress Captain (Best in Restaurant Test) RoboCup World Cup, Eindhoven, Netherlands.**   2024
- **Placed 1st in @Home League RoboCup German Open, Kassel.**  
- **1st Place (NimbRo) ANA Avatar XPRIZE Challenge, Las Vegas, USA.**   2022
- **1st in AdultSize Soccer Competition / 1st in AdultSize Technical Challenge / 1st in AdultSize Drop-In Challenge / Best Humanoid Award RoboCup World Cup, Bangkok, Thailand.**  
- **Placed 3rd in the Customer Interaction Category of the Future Convenience Store Challenge (private attendance) World Robot Summit, Nagoya, Japan.**   2021
- **Placed 1st in @Home Open Platform League (World Champion) RoboCup World Cup, Sydney, Australia.**   2019
- **Best in Professional Service Robots League European Robotics League, Bonn (Germany), Koblenz (Germany).**  
- **Best in Consumer Service Robots League European Robotics League, Lisbon, Portugal.**  
- **Placed 3rd in @Home League RoboCup German Open, Magdeburg.**  
- **Placed 1st in @Home Open Platform League (World Champion) / Best Poster Award Open Platform League RoboCup World Cup, Montreal, Canada.**   2018
- **Placed 3rd in the Customer Interaction Category of the Future Convenience Store Challenge World Robot Summit, Tokyo, Japan.**  
- **Best in TBM1: Getting to know my home / Best in TBM2: Welcoming Visitors / Best in TBM3: Catering for Grannie Annie’s Comfort / Best in TBM5: GPSR (some of them shared equally with other teams) European Robotics League, Lisbon (Portugal), Edinburgh (Scotland), Barcelona (Spain).**  
- **Placed 1st in @Home League RoboCup German Open, Magdeburg.**  
- **Placed 1st in @Home Open Platform League (World Champion) RoboCup World Cup, Nagoya, Japan.**   2017
- **Finalist ICRA 2017 DJI RoboMaster Mobile Manipulation Challenge, Singapore, Singapore.** 
- **Placed 1st in @Home League RoboCup German Open, Magdeburg.**  
- **Placed 2nd DJI RoboMaster Technical Challenge, Shenzhen, China.**  
- **Best in TBM1: Getting to know my home, Best in TBM4: Visit my home (Navigation), Best in TBM5: GPSR European Robotics League, Lisbon (Portugal), Peccioli (Italy) .**  
- **Placed 2nd in @Home League RoboCup European Open, Eindhoven, Netherlands.**   2016
- **Finalist in @Home League RoboCup World Cup, Leipzig, Germany.** 
- **Placed 1st in @Home League (World Champion) / Placed 1st in Speech Recognition and Audio Detection / Best Looking Robot Award RoboCup World Cup, Hefei, China.**   2015
- **1st in overall ranking (together with team SocRob) / Best Team award RoCKIn, Lisboa, Portugal.**  
- **Best Demonstration in RoCKIn@Home track RoCKIn Camp, Peccioli, Italy.**  
- **Placed 2nd in @Home League RoboCup German Open, Magdeburg.**  

Awards (continued)

- › **1st in the @Home Track / 2nd in Object Recognition RoCKIn**, Toulouse, France.   2014
- › **Finalist in the @Home League RoboCup German Open**, Magdeburg. 
- › **Best Final Demonstration in the RoCKIn@Home track RoCKIn Camp**, Rome. 
- › **Finalist in the @Home League RoboCup WorldCup**, Eindhoven, Netherlands.  2013
- › **Placed 3rd in the @Home League RoboCup German Open**, Magdeburg.  

Other Awards

- › **Best Paper Award (Efficient Image Annotation via Semi-Supervised Object Segmentation with Label Propagation)** RoboCup Symposium, Incheon, South Korea. 2026
- › **Finalist for Best Oral Paper Award (Robust Immersive Telepresence and Mobile Telemanipulation: NimbRo wins ANA Avatar XPRIZE Finals)** Humanoids, Austin, USA. 2023
- › **Limbo (private built robot was awarded)** Region56+ Award, Koblenz, Germany. 2021
- › **Placed 1st in the Heart-Met Gesture Recognition Challenge / Placed 1st in the Heart-Met Action Recognition Challenge (AcRec@UniKoblenz)** Metrics Project, Online.
- › **Lehrpreis Sommersemester 2017 | Projekt- und Forschungspraktikum: Robbie** Lehrpreis der Hochschuldidaktischen Arbeitsstelle, Koblenz, Germany. 2017

Funding

- › **Project Funding**, OV6DP: Open Vocabulary 6D Pose Estimation 60.000 EUR 2024
euROBIN Cascade Funding
Role: Principal Investigator
- › **Project Funding**, Sondierungsprojekt Stadtreinigung 53.468,57 EUR 2023
BMBF
Role: Proposal Preparation (Contribution), Implementation
- › **Award Money**, ANA Avatar XPRIZE Challenge 5.000.000 USD 2022
XPRIZE Foundation
Role: Award Winner (with Max Schwarz, Christian Lenz, Bastian Pätzold, Andre Rochow, Michael Schreiber, and Sven Behnke)
- › **Sponsorship**, Sponsoring of PAL Robotics TIAGo Steel edition platform 75.000 EUR 2017
PAL Robotics
Role: Applicant

Smaller Grants & Awards

- › **Award Money**, World Robot Summit Prize Money 3rd Place 2.200 EUR 2022
World Robot Summit
Role: Award Winner
- › **Travel Support**, World Robot Summit Travel Support 1.200 EUR
World Robot Summit
Role: Applicant
- › **Award Money**, Region56+ Award 7.500 EUR 2021
Region56+
Role: Award Winner
- › **Sponsorship**, Zukunftsforum 2.000 EUR 2019
Energieversorgung Mittelrhein
- › **Invited Talk**, VDI Jahresmitglieder-Versammlung 300 EUR
VDI
- › **Travel Support**, IROS Mobile Manipulation Hackathon Travel Support 400 EUR 2018
IROS 2018
Role: Applicant
- › **Award Money**, Lehrpreis 2017 500 EUR 2017
Hochschuldidaktische Arbeitsstelle
Role: Award Winner

Talks

- ▶ **Dein Freund und Helfer - der Assistenzroboter NimbRo** 2026
Gesellschaft für Informatik (GI), B-IT, Bonn, Germany
- ▶ **Benchmarking autonomer Serviceroboter im öffentlichen Raum**
FZI Open House, Forschungszentrum Informatik (FZI), Karlsruhe, Germany
- ▶ **Best Practices: NimbRo@Home** 2025
Guest Lecture, University of Augsburg, (remote), Germany
- ▶ **Advancing Autonomous Service Robots: From Human Intelligence to Embodied Artificial Intelligence in Domestic Environments (Scientific Keynote)**
RimA Summer School 2025, Forschungszentrum Informatik (FZI), Karlsruhe, Germany
- ▶ **NimbRo@Home: Autonomous service robots performing domestic tasks**
RIG STAGE - Demo Pitches, Automatica, Munich, Germany
- ▶ **Panel-Member for Round Table “Benchmarking and Challenges”**
RIG Panel, Automatica, Munich, Germany
- ▶ **Advancing Autonomous Service Robots: From Human Intelligence to Embodied Artificial Intelligence**
Campus Visit, University of Technology Nuremberg (UTN), Nuremberg, Germany
- ▶ **Embodied AI: Bridging Human Motion Analysis and Autonomous Robotic Actions**
Campus Visit, Technical University of Braunschweig
- ▶ **From Multimodal Few-Shot Action Recognition towards Imitation in Embodied AI** 2024
Campus Visit, Dresden (Online)
- ▶ **Multimodal Few-Shot Action Recognition for Embodied AI**
Campus Visit, Leipzig University, Leipzig, Germany
- ▶ **Multimodal Few-Shot Action Recognition for Embodied AI**
Campus Visit, University of Lübeck, Lübeck, Germany
- ▶ **Embodied AI: Towards improved human robot interaction by learning from human motion** 2023
Research Workshop: Control of Movement in Biology and Robotics, University Bayreuth, Campus Kulmbach, Germany
- ▶ **On the recognition and imitation of human activities on robotic platforms** 2022
Advanced Lecture Series on Artificial Intelligence and Autonomous Systems, Bonn Rhein Sieg, Germany (online)
- ▶ **Servicerobotik - Wettbewerbe und Anwendungen**
MN-Seminar, Darmstadt, Germany (online)
- ▶ **Gesture and activity challenge result presentation of AcRec@UniKoblenz** 2021
HEART-MET workshop, Sankt Augustin, Germany (online)
- ▶ **Golem - Faszination Künstliche Intelligenz**
Kultursalon Koblenz, Koblenz, Germany
- ▶ **Towards adaptive learning in robot competitions** 2020
European Robotics Forum, Malaga, Spain
- ▶ **Roboter und künstliche Intelligenz**
Guestlecture: Intelligenz, Denken und Problemlösen / Roboter - KI oder Bauplan für eine Seele, Koblenz, Germany
- ▶ **Künstliche Intelligenz in Haushalt- und Servicerobotik** 2019
VDI Mittelrhein Jahresversammlung, Koblenz, Germany
- ▶ **homer@Uni Koblenz** 2018
Laboratory for Active and Attentive Vision, York University, Toronto, Canada
- ▶ **Lernen durch Demonstration**
Guestlecture: Intelligenz, Denken und Problemlösen, Koblenz, Germany
- ▶ **RoboCup 2017 / Where is HRI and where can it go to in RoboCup? RO-MAN Workshop: HRI for Service Robots in RoboCup@Home** 2017
IEEE International Symposium on Robot and Human Interactive Communication, Lisbon, Portugal
- ▶ **Report from ERL Service Robots RO-MAN Workshop: HRI for Service Robots in RoboCup@Home**
IEEE International Symposium on Robot and Human Interactive Communication, Lisbon, Portugal
- ▶ **Team’s experience in ERL - Service Robots European robotics competitions and challenges: status quo and lessons learned**
European Robotics Forum, Edinburgh, Scotland
- ▶ **Navigation and Mapping of Team homer@UniKoblenz**
European Robotics League, Peccioli, Italy

Academic Activities

- › IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2025 –
Associate Editor
- › Center for Robotics, University of Bonn 2024 –
Founding Member
- › European Laboratory for Learning and Intelligent Systems (ELLIS) PhD Program
Evaluation Committee
- › RoboCup@Home Eindhoven, Netherlands 2024
Organizing Committee RoboCup@Home
- › Institute for Computational Visualistics, University of Koblenz-Landau 2021 – 2022
Marketing
- › University of Koblenz-Landau 2019 / 2020
Member of appointments committee, Institute for Computational Visualistics
- › Institute for Computational Visualistics, University of Koblenz-Landau 2016 – 2022
Teaching staff representative for head of institute sessions
- › RoboCup German Open (Magdeburg) 2018 – 2020
League Co-Chair (RoboCup@Home), together with PD Dr.-Ing. Sven Wachsmuth
- › RoboCup@Home Sydney, Australia 2019
Organizing Committee RoboCup@Home
- › RoboCup@Home Montreal, Canada 2018
Technical Committee RoboCup@Home
- › RoboCup@Home Nagoya, Japan 2017
Organizing Committee RoboCup@Home
- › RoboCup@Home Leipzig, Germany 2016
Organizing Committee RoboCup@Home

Reviewing Activities

- › *Künstliche Intelligenz / German Journal of Artificial Intelligence, KI* 2026
- › *IEEE/RSJ International Conference on Intelligent Robots and Systems, IROS* 2020 – 2026
- › *IEEE International Conference on Robotics and Automation, ICRA* 2019 – 2026
- › *IEEE International Conference on Robot and Human Interactive Communication, RO-MAN* 2019 – 2024
- › *IEEE Robotics and Automation Letters, RA-L* 2019 – 2026
- › *IEEE Signal Processing Letters, IEEE SPL* 2023
- › *Springer International Journal of Computer Vision, IJCV*
- › *IEEE International Conference on Humanoid Robots, Humanoids* 2023 – 2024
- › *IEEE/SICE International Symposium on System Integrations, SII* 2024
- › *ACM Transactions on Human-Robot Interaction, THRI*
- › *Workshop Toward Robot Avatars, Avatar Workshop* 2023 – 2024

Teaching Experience

- › **Lecture (University of Bonn)** WS 25/26
Cognitive Robotics
- › **Lab (University of Bonn)** since SS 22
Cognitive Robotics
- › **Projektgruppe (University of Bonn)**
Kognitive Robotik
- › **Seminar (University of Bonn)**
Cognitive Robotics
- › **Research Internship (University of Koblenz-Landau, Koblenz)** SS 21 – WS 21/22
Multimodal Action Recognition
- › **Project Internship (University of Koblenz-Landau, Koblenz)**
Multimodal Action Recognition

Teaching Experience (continued)

- › **Seminar (University of Koblenz-Landau, Koblenz)** WS 20/21 – WS 21/22
Machine Learning for Computer Vision
- › **Lecture (University of Koblenz-Landau, Koblenz)** WS 18, WS 19, WS 20
Autonomous Mobile Robots
- › **Seminar (University of Koblenz-Landau, Koblenz)** SS 17, SS 18, SS 19
RoboCup@Home Accompanying Seminar
- › **Project internship (University of Koblenz-Landau, Koblenz)** WS 16/17 – WS 18/19
RoboCup@Home
- › **Research internship (University of Koblenz-Landau, Koblenz)**
RoboCup@Home

Supervised Theses

- › **Language-Conditioned Multitask Manipulation Using Diffusion Models** 2025
Jonas Bode, M.Sc.
- › **Action Transcript Prediction from Multi-Modal Environments using Vision-Language Models** 2024
Yihao Wang, M.Sc.
- › **Neural Architecture Search for Skeleton-based Action Recognition** 2022
Christian Brozmann, M.Sc.
- › **Sign language recognition using convolutional neural networks**
Matthias Wellstein, B.Sc.
- › **Action Recognition on Egocentric Video Sequences in Natural Environments**
Katrina Mahlendorf, B.Sc.
- › **Action Recognition on Skeleton Sequences Using Graph Convolutional Neural Networks** 2021
Ida Germann, B.Sc.
- › **Next-Best-View Estimation based on Deep Reinforcement Learning for Active Object Classification** 2020
Christian Korbach, M.Sc.
- › **Multimodal Action Recognition using Graph Convolutional Neural Networks**
Michael Duhme, M.Sc.
- › **Action Segmentation on Representations of Skeleton Sequences using Transformer Networks**
Simon Häring, M.Sc.
- › **Evaluation verschiedener Netzwerkarchitekturen für Aktionserkennung auf Signalrepräsentationen**
Alex Weissörtel, B.Sc.
- › **Generative Adversarial Networks for Image Data Augmentation** 2019
Robin Bartsch, B.Sc.
- › **Adaptives Lernen durch Demonstration mittels Objektinteraktion**
Tobias Evers, B.Sc.
- › **Imitating Manipulation Tasks Using Generative Adversarial Networks**
Ivanna Kramer, M.Sc.
- › **Simultaneous Action and Object Classification in Videos using Convolutional Neural Networks**
Lukas Debald, M.Sc.
- › **Visual Object Tracking and Prediction Using Recurrent Neural Networks**
Thies Möhlenhof, M.Sc.
- › **Detection of Human-Object Interactions**
Jasvinder Kaur, M.Sc.
- › **Reinforcement Learning for Robot Manipulation Tasks**
Jannis Eisenmenger, B.Sc.
- › **Markerless Action Recognition** 2018
Gregor Heuer, M.Sc.

Supervised Theses (continued)

- › **Object detection using convolutional neural networks**
Simon Häring, B.Sc.
- › **Inverse Reinforcement Learning for Robotic Manipulation Tasks**
Nick Theisen, M.Sc.
- › **Simultaneous Object Localization and Classification based on Semantic Segmentation**
Lukas Buchhold, B.Sc.
- › **Evaluation von physiotherapeutischen Übungen durch Analyse von Tiefenbildern** 2017
Niko Schmidt, B.Sc.

Young Talent Support

- › University of Koblenz and Instituto Superior Técnico (IST), Lisbon 2018
Established ERASMUS Program
- › Meet the Women In Robotics V (RSS Workshop) 2019
Motivated and supported the participation of Ivanna Kramer
- › IROS 2019 Conference
Student Travel Awards for Conference Participation
- › Shenzhen, China (DJI Robomasters Competition) 2018
DAAD Travel Support for 4 Students
- › RoboCup World Championship (Nagoya, Japan; Montreal, Canada; Sydney, Australia) 2017–2019
Funded Student Team Participation (Travel, Registration, Robot Transport)
- › European Robotics League (Portugal, United Kingdom, Italy, Spain)
Funded Student Team Participation (Travel, Robot Transport)

Shortlist

- › **University of Braunschweig (W2), Professorship for AI-based Robotics** 2nd place 2025
- › **University of Luebeck (W1)** 2nd place 2023

Media Coverage

- › Radio Bonn/Rhein-Sieg: Team NimbRo der Uni Bonn hat den beste Haushaltsroboter Deutschlands entwickelt **Radio** 01.04.2026
- › Deutschlandfunk: RoboCup German Open 2026 – Weltweit größter Wettbewerb für intelligente Roboter **Radio** 11.03.2026
- › Bild der Wissenschaft: Die Champions vom Rhein **Magazine** 14.01.2025
- › WDR Lokalzeit: Bonner Haushaltsroboter sind Weltmeister **TV** 27.09.2024
- › IEEE Spectrum: Your robotic avatar is almost ready **Magazine** 16.04.2023
- › RLP.TV **TV** 18.07.2019
- › RLP.TV **TV** 31.05.2019
- › ARD Tagesschau (12:00) **TV** 19.10.2018
- › SWR Landeschau: Deutschland ist Roboter-Weltmeister **TV** 02.07.2018
- › Campus TV - Zu Besuch beim Roboterteam **TV** 19.03.2018
- › TV Mittelrhein - TIAGo der Serviceroboter Studiotalk **TV** 07.03.2018
- › STV: Home-help robots put through paces in tournament **TV** 26.01.2018
- › SAT.1 - 17:30 **TV** 02.11.2017
- › SWR Landeschau, Haushalts-Roboter aus Koblenz gewinnt Weltmeistertitel **TV** 15.08.2017
- › tech360.tv news roundup - Week 1 June 2017 **TV** 01.06.2017
- › SWR - Kollege Roboter kommt gleich **TV** 03.11.2016
- › Campus TV (Tag der Computervisualistik) **TV** 25.07.2016
- › SWR Landesschau **TV** 19.07.2016
- › DASDING! (Koblenzer Roboter Lisa brät Spiegeleier) **TV** 27.05.2016
- › ARD - W wie Wissen (Spiegelei und Kaffee, bitte! Roboter als Servicekraft) **TV** 27.02.2016
- › SAT.1 - 17:30 (Roboter Lisa hilft beim Leben) **TV** 11.12.2015