


# Curriculum Vitae

## Personal information

Name: **Markus Knauer**

Nationality: German

 Munich, Germany

 [Google Scholar](#)

 [github/MarkusKnauer](#)

 [linkedin/knauer-markus](#)

 [researchgate/Markus-Knauer](#)

## Education

Since 11/2020      Doctoral candidate/**Ph.D.** (Dr. rer. nat.) in **Computer Science**, Major: **Machine Learning**, Artificial Intelligence, TUM School of Computation, Information and Technology (CIT), Technical University of Munich (**TUM**), Germany.

10/2018 – 09/2020      **Master** of Science in Computer Science, Kempten University of Applied Sciences. Major: Data Science, Germany.  
Best in class, GPA 4.0.

02/2018 – 07/2018      **Semester abroad**, Diploma, University of the Sunshine Coast (USC), Australia.  
Major: Data Science, IT, International Business

10/2014 – 07/2018      **Bachelor** of Science in Information Systems, Kempten University of Applied Sciences, Germany.  
Best in class, GPA 4.0.

## Work experiences

since 11/2020      **Research Scientist**, German Aerospace Center (DLR), Institute of Robotics and Mechatronics, Department: Cognitive Robotics, Oberpfaffenhofen, Germany.

Topics: **Probabilistic Machine Learning** for Robots, Foundational Models, Incremental Learning  
Since 2023: **PhD Speaker** for the whole Institute.

since 10/2024

**Teaching Assistant** for **Machine Learning**, CIT, Technical University of Munich (TUM), Germany.

11/2019 – 08/2020

**Working student**, German Aerospace Center (DLR), Institut of Robotics and Mechatronics, Department: Perception and Cognition, Oberpfaffenhofen. Germany.

Topics: Deep Learning, Neural network architectures, Computer vision, Online Learning.

10/2018 – 10/2019

**Research Associate**, Digital Lab – Research Centre Allgäu, Kempten im Allgäu, Germany.

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Topics: Machine learning for industry, Connectivity, IoT, iOS applications.

08/2017 – 01/2018

**Student Research Assistant** (Bachelor) at Robert Bosch GmbH, Immenstadt im Allgäu, Germany.

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Development of a real-time application for online visualization of machine states in production lines as part of the "Industry 4.0" system architecture.

12/2015 – 09/2017

**Student Assistant / Tutor**, Kempten University of Applied Sciences, Germany.

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Creation and revision of lecture and exercise contents with Prof. Dr. Stefan Wind (Business Intelligence, Databases, web-based Business Models, E-Business). Tutor for Business Intelligence.

09/2016 – 02/2017

**Working student**, Endress+Hauser Wetzler GmbH + Co. KG, Nesselwang, Germany.

Topics: IT-Project-Management of the international project, Business Analysis using SAP, SAP Fiori and SAP GuiXT Edit software rollout.

02/2014 – 09/2014

**Industrial Clerk**, Sensor-Technik Wiedemann GmbH, Kaufbeuren, Germany.

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Topics: General HR work like application administration, payroll management, people management, HR software rollout

09/2011 – 01/2014

**Industrial Clerk Trainee**, Sensor- Technik Wiedemann GmbH, Kaufbeuren, Germany.

Topics: HR, Controlling, Sales, Management, Logistics, QM, etc. Graduated with GPA 4.0.

## Publications

- 2025 **Knauer, M.**, Albu-Schäffer, A., Stulp, F., Silvério, J. "Interactive incremental learning of generalizable skills with local trajectory modulation", in *IEEE Robotics and Automation Letters (RA-L)*, vol. 10, no. 4, pp. 3398-3405, April 2025, (also in 2024 **CoRL** Workshops) <https://doi.org/10.1109/LRA.2025.3542209>
- 2025 Bustamante, S., **Knauer, M.**, Thun, J., Schneyer, S., Albu-Schäffer, A., Weber, B., Stulp, F. "Grounding Embodied Question-Answering with State Summaries from Existing Robot Modules" in *2025 IEEE International Conference on Robotics and Automation (ICRA)*, (also in 2024 **RSS** Workshops) <https://elib.dlr.de/205203/>
- 2024 Ding, J., Kessler, I., Perzylo, A., **Knauer, M.**, et. 8 al. „Intuitive Instruction of Robot Systems: Semantic Integration of Standardized Skill Interfaces" in *2024 IEEE International Conference on Industrial Informatics (INDIN)*, <https://doi.org/10.1109/INDIN58382.2024.10774421>
- 2024 Fiorini, E., **Knauer, M.**, Silvério, J. „Human-intention-aware skill modulation using energy tanks for collaborative tasks" in *2024 Conference on Robot Learning (CoRL) Workshops*. <https://openreview.net/pdf?id=3CUwlnKW36>
- 2023 Denninger, M., Winkelbauer, D., Sundermeyer, M., Boerdijk, W., **Knauer, M.**, Strobl, K., Humt, M., Triebel, R. „Blenderproc2: A procedural pipeline for photorealistic rendering" in *2023 Journal of Open Source Software (JOSS)*. <https://joss.theoj.org/papers/10.21105/joss.04901>
- 2022 **Knauer, M.**, Denninger, M., Triebel, R. „Recall: Rehearsal-free continual learning for object classification" in *2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. <https://doi.org/10.1109/IROS47612.2022.9981968>
- 2022 **Knauer, M.**, Denninger, M., Triebel, R., „HOWS-CL-25: Household Objects Within Simulation Dataset for Continual Learning" *Zenodo*. <https://doi.org/10.5281/zenodo.7189434>
- 2020 Denninger, M., Sundermeyer, M., Winkelbauer, D., Olefir, D., Hodan, T., Zidan Y., Elbadrawy, M., **Knauer, M.**, Katam, H., Lodhi, A. "BlenderProc: Reducing the Reality Gap with Photorealistic Rendering" in *2020 Robotics: Science and Systems (RSS) Workshops*. <https://elib.dlr.de/139317/>