







# Quentin Leboutet, PhD | AI Research Scientist




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AI Research Scientist with 8+ years of experience in academic and industrial R&D. Expertise in Artificial Intelligence, Deep Learning, Generative AI, Agentic AI, Reinforcement Learning, Robotics, Control, Identification and Sensor Fusion.

## PROFESSIONAL EXPERIENCE

- **AI Research Scientist**  
Intel Corporation  
*February 2022 – Present*  
*Munich, Germany*
  - **3D Foundation Models:** Benchmarked and refined diffusion models and representations for high-fidelity 3D assets generation. Results submitted to CVPR (2025) [1].
  - **Articulated Assets Generation:** Spearheaded the development of **MIDGArD**, a generative framework for synthesis of 3D articulated assets. Results published in NeurIPS (2024) [2].
  - **Simulation & Software Tools:**
    - **SPEAR:** Enhanced a photorealistic simulator for testing embodied AI algorithms [4].
    - **Open3D:** Integrated primitive shape fitting to Open3D.
    - **OpenBot:** Investigated sim2real transfer and policy training in the SPEAR simulator [5].
- **Graduate Research And Teaching Assistant**  
Institute for Cognitive Systems – Technical University of Munich  
*July 2016 – October 2021*  
*Munich, Germany*
  - **Doctoral Research:** conducting research on the topic “Enhanced Robot Compliance, State Estimation and Identification using Distributed Tactile Feedback: Leveraging Redundancy and Multimodality” [6],[7],[8],[9],[10],[11].
  - **Teaching Activities:** Humanoid Robotics Systems (2017 – 2021), Humanoid Sensors and Actuators (2017 – 2021), Humanoid Robo-Cup (2018 – 2021), Multi-sensory based robot dynamic manipulation (2016 – 2018) along with multiple research seminars, research projects and HiWi supervision.
  - **Mentorship:** Supervised 5 master thesis students from the Technical University of Munich, a research student from “ENS Paris-Scalay” (France), an internship student from “ENS Ulm” (France) and a diploma-thesis student from “ENSEA” (France).
- **Engineering Consultant**  
EyeLights SAS  
*March 2016 – December 2016*  
*Toulouse, France*
  - Designed the Printed Circuit Board (PCB) of the first Head-Up Display (HUD) prototype.
- **Student Research Assistant**  
Institute for Cognitive Systems – Technical University of Munich  
*December 2015 – April 2016*  
*Munich, Germany*
  - **Robot Skin Sensor:**
    - CAD design of an artificial skin cover for a UR5 industrial robot.
    - Sensor prototype manufacturing using 3D printers.
    - Validation of the prototypes on real robots and realization of a set of endurance tests.
  - **Teaching Activities:** Tutor in Multi-sensory based robot dynamic manipulation.
- **Engineer Intern**  
FH Joanneum  
*June 2013 – July 2013*  
*Kapfenberg, Austria*
  - Designed, built and tested a persistence-of-vision screen with an embedded Linux.
- **Engineer Intern**  
Wuhan University of Technology  
*July 2012 – September 2012*  
*Wuhan City, China*
  - Developed fuzzy logic controllers for a Stewart platform.

## EDUCATION

- **Ph.D. in Electrical Engineering & Computer Science**  
Technical University of Munich – TUM  
*July 2016 – January 2022*  
*Munich, Germany*
  - Focus: Robot Control, State Estimation, Inertial Parameters Identification.
- **M.Sc. in Electrical Engineering & Computer Science**  
Technical University of Munich – TUM  
*October 2013 – February 2016*  
*Munich, Germany*
  - Focus: Robotic, Control Systems and Nanotechnologies.
- **M.Eng. in Mechatronics**  
École Nationale Supérieure de l'Électronique et de ses Applications – ENSEA  
*September 2011 – June 2013*  
*Cergy-Pontoise, France*
  - Focus: Mechatronics, Power Engineering, Signal Processing.

## SKILLS

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<b>Programming:</b>	C/C++ <sup>***</sup> , Python <sup>***</sup> , MATLAB <sup>***</sup> , Bash <sup>**</sup> , R <sup>*</sup> , Swift <sup>*</sup> , VHDL <sup>*</sup>
<b>AI Frameworks:</b>	PyTorch <sup>**</sup> , TensorFlow <sup>**</sup>
<b>CAD ECAD:</b>	SolidWorks <sup>***</sup> , Fusion 360 <sup>***</sup> , CATIA <sup>*</sup> , Eagle CAD <sup>***</sup> , KiCad <sup>**</sup>
<b>Content Creation:</b>	Blender <sup>**</sup> , Unreal Engine <sup>**</sup> , Unity <sup>*</sup>
<b>Other Tools:</b>	ROS <sup>***</sup> , Slurm <sup>**</sup> , Git <sup>**</sup> , L <sup>A</sup> T <sub>E</sub> X <sup>***</sup> , Microsoft Office <sup>**</sup>
<b>Domain Expertise:</b>	Artificial Intelligence, Machine Learning, Deep Learning, Generative AI, Agentic AI, Reinforcement Learning, Robot Control, State Estimation, Parameter Identification, PCB Design, CNC Machining, 3D Printing.
<b>Languages:</b>	French <sup>***</sup> ( <i>mother tongue</i> ), English <sup>***</sup> , German <sup>**</sup> , Spanish <sup>*</sup> .

## AWARDS

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- **Division Recognition Award** | Intel Corporation, 2022 | For contributions to the SPEAR simulation platform.
- **Best Paper Award** | MDPI Applied Science, 2022 | For “*Inertial Parameter Identification in Robotics: A Survey*” [6].
- **Entrepreneurship Award** | ENSEA, 2013 | Best entrepreneurial project in the “Create, Convince, Grow” contest.

## COMMUNITY SERVICE

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**Reviewer for the following scientific conferences:**

- IEEE Humanoids
- IEEE International Conference on Robotics and Automation (ICRA)
- IEEE International Conference on Intelligent Robots and Systems (IROS)
- IEEE Conference on Decision and Control (CDC)

**Reviewer for the following scientific Journals:**

- IEEE Transaction on Robotics (TRO)
- IEEE Robotics and Automation Letters (RA-L)
- International Journal of Robotics Research (IJRR)

## SELECTED PUBLICATIONS

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- [1] Wiedemann, N.<sup>\*</sup>, Liu, S.<sup>\*</sup>, **Leboutet, Q.**<sup>\*</sup>, Gao, K., Ummenhofer, B., Paulitsch, M., Yuan, K. “Unifi3D: A Study on 3D Representations for Generation and Reconstruction in a Common Framework”. In: CVPR 2025 (*Under review*).
- [2] **Leboutet, Q.**, Wiedemann, N., Cai, Z., Paulitsch, M., Yuan, K. “[MIDGArD: Modular Interpretable Diffusion over Graphs for Articulated Designs](#).” NeurIPS 2024.
- [3] Schoch, P., Yang, F., Ma, Y., Leutenegger, S., Hutter, M., **Leboutet, Q.** “[IN-Sight: Interactive Navigation through Sight](#).” IROS 2024.
- [4] Roberts, M., **Leboutet, Q.**, et al. “SPEAR: A Photorealistic Simulator for Embodied AI.” (NeurIPS resubmission pending, 2025).
- [5] Müller, M., Brahmabhatt, S., Deka, A., **Leboutet, Q.**, Hafner, D., Koltun, V. “[OpenBot-Fleet: A System for Collective Learning with Real Robots](#).” ICRA 2024.
- [6] **Leboutet, Q.**, Roux, J., Janot, A., Guadarrama-Olvera, J.R., Cheng, G. “[Inertial Parameter Identification in Robotics: A Survey](#)” MDPI Applied Science 11.9 (2021). **Best Paper Award**.
- [7] **Leboutet, Q.**, Bergner, F., Cheng, G. “[Online Configuration Selection for Redundant Arrays of Inertial Sensors: Application to Robotic Systems Covered with a Multimodal Artificial Skin](#).” IROS 2020.
- [8] **Leboutet, Q.**, Guadarrama-Olvera, J.R., Bergner, F., Cheng, G. “[Second-order Kinematics for Floating-base Robots using the Redundant Acceleration Feedback of an Artificial Sensory Skin](#).” ICRA 2020.
- [9] Cheng, G., Dean-Leon, E., Bergner, F., Guadarrama-Olvera, J.R., **Leboutet, Q.**, Mittendorf, P. “[A comprehensive realisation of Robot Skin: Sensors, Sensing, Control and Applications](#).” Proceedings of the IEEE, 2019.
- [10] **Leboutet, Q.**, Dean-Leon, E., Bergner, F., Cheng, G. “[Tactile-based whole-body compliance with force propagation for mobile manipulators](#).” IEEE Transactions on Robotics, 2019.
- [11] **Leboutet, Q.**, Dean-Leon, E., Cheng, G. “[Tactile-based compliance with hierarchical force propagation for omnidirectional mobile manipulators](#).” IEEE-RAS Humanoids, 2016.