Abhinav **Valada**

Professor & Director of Robot Learning Lab

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Academic & Industry Experience

Full Professor (W3), Chair of Autonomous Intelligent Systems — *Freiburg, Germany*
University of Freiburg, Department of Computer Science, Robot Learning Lab — *Aug. 2023 - Present*

Assistant Professor (W1) of Robot Learning — *Freiburg, Germany*
University of Freiburg, Department of Computer Science, Robot Learning Lab — *Dec. 2019 - July 2023*

Postdoctoral Research Scientist — *Freiburg, Germany*
University of Freiburg, Department of Computer Science, Autonomous Intelligent Systems Lab — *Mar. 2019 - Nov, 2019*

Ph.D. Student and Research Associate — *Freiburg, Germany*
University of Freiburg, Department of Computer Science, Autonomous Intelligent Systems Lab — *Aug. 2014 - Feb. 2019*

Co-founder & Director of Operations — *Pittsburgh, USA*
Platypus LLC — *Aug. 2012 - Aug. 2015*

Systems Engineer — *Pittsburgh, USA*
National Robotics Engineering Center — *Jul. 2013 - Jul. 2014*

Systems/Software Engineer — *Pittsburgh, USA*
Carnegie Mellon University, The Robotics Institute, Field Robotics Center — *Nov. 2011 - Jun. 2013*

Research Scholar — *Pittsburgh, USA*
Carnegie Mellon University, The Robotics Institute, Field Robotics Center — *Jan. 2010 - Oct. 2011*

Research Assistant — *Vellore, India*
VIT University — *Aug. 2008 - Dec. 2009*

Research Associate — *Chennai, India*
Indian Institute of Technology Madras — *May. 2009 - Jul. 2009*

Research Intern — *Bangalore, India*
ABB Robotics — *Apr. 2008 - Jun. 2008*

Education

Ph.D. in Computer Science (Dr. rer. nat.) — *Freiburg, Germany*
University of Freiburg — **summa cum laude (with highest distinction)** — *Aug. 2014 - Feb. 2019*
Thesis: *Discovering and Leveraging Deep Multimodal Structure for Reliable Robot Perception and Localization*
Advisors: Prof. Dr. Wolfram Burgard, Prof. Dr. Dieter Fox

M.S. in Robotics — *Pittsburgh, USA*
Carnegie Mellon University — *Jan. 2012 - Dec. 2013*
Thesis: *An Autonomous Robot for Manipulation and Mapping of NFT Installations*
Advisors: Prof. Dr. George Kantor and Prof. Dr. Paul Scerri, Carnegie Mellon University, USA

B.Tech in Electronics and Instrumentation Engineering — *Vellore, India*
VIT University — *Jun. 2006 - Dec. 2010*
Thesis: *Design and Development of a Wireless Sensor Network System for Precision Agriculture*
Advisor: Prof. Dr. George Kantor, Carnegie Mellon University, USA

Honors & Awards

Honors

IROS Toshio Fukuda Young Professional Award for contributions to the advancement of robot learning — *2024*
IEEE Early Career Award in Robotics and Automation for contributions that have had a major impact in robotics — *2023*
DFG Emmy Noether AI Fellow of the German Research Foundation (DFG) for exceptionally qualified early career researchers — *2021*
ELLIS Scholar of the European Laboratory for Learning and Intelligent Systems (ELLIS) Society — *2020*

Robotics: Science and Systems (RSS) Pioneer for world's top early career researcher in robotics *2018*

Awards

Best Paper Award on Cognitive Robotics at IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) *2024*
Best Student Paper Award Finalist at IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) *2024*
Outstanding Workshop Presentation Award at IROS Workshop on Long-Term Perception for Autonomy *2024*
Third place at the Future Prize (Zukunftspreis) *2024*
Best Paper Award Honorable Mention IEEE Robotics and Automation Letters *2023*
Best Paper Award at IROS 2022 Workshop on Mobile Manipulation and Embodied Intelligence *2022*
NVIDIA Research Award for socially compliant autonomous robot navigation *2022*
AutoSens Most Novel Research Award for amodal panoptic segmentation *2022*
Second Place in the CVPR Embodied AI SoundSpaces Challenge *2022*
Winner of the NeurIPS AI Driving Olympics - Panoptic Tacking Challenge *2021*
Winner of the CVPR Embodied AI SoundSpaces Challenge *2021*
AutoSens Silver 2020 Vision Award for inspiring progress throughout the vehicle perception ecosystem *2020*
Finalist for Young Engineer of the Year Award at AutoSens for demonstrating great achievement & leadership in ADAS *2020*
Winner of the ECCV Robust Vision Challenge - Panoptic Segmentation *2020*
Finalist for Georges Giralt PhD Award for the Best Robotics PhD Thesis in Europe *2020*
Doctoral Consortium Award at The International Symposium on Robotics Research (ISRR) *2017*
Chancellor's Scholarship at VIT University *2009*

Funded Research Projects

Hybrid Intelligence for Advanced Collective Awarness and Decision Making in Urban Environments
Principal Investigator, funded by European Commission Horizon Europe *2025-2028*

Deep Learning Cluster
Principal Investigator, funded by German Research Foundation (DFG) and the state of Baden-Württemberg *2024*

Robust Visual SLAM for Unstructured Environments
Principal Investigator, funded by Honda R&D Co., Ltd. *2024-2025*

Collaborative Research Centre 1597 Small Data - Essentials For Few-Shot Learning
Principal Investigator, funded by German Research Foundation (DFG) *2023-2027*

AI-based System Architectures for Automated Driving
Coordinator, funded by Robert Bosch GmbH, Lighthouse Collaboration *2023-2026*

Zuse School ELIZA
Principal Investigator, funded by Federal Ministry of Education and Research (BMBF) *2022-2027*

Autonomous Robust Outdoor Robots
Principal Investigator, funded by Baden-Württemberg Foundation *2023-2025*

Robot Learning for Long-Horizon Mobile Manipulation
Principal Investigator, funded by Toyota Motor Europe *2023-2025*

Learning BEV Maps for Automated Driving
Principal Investigator, funded by Qualcomm Technologies, Inc. *2022-2025*

Learning Multisensory Integration for Neural Circuits Modeling
Principal Investigator, funded by Cluster of Excellence BrainLinks-BrainTools *2022-2023*

Efficient Learning for Transferable Robot Autonomy in Human-Centered Environments
Principal Investigator, funded by German Research Foundation (DFG), Emmy Noether AI Program *2023-2028*

Responsible and Scalable Learning for Robots Assisting Humans
Principal Investigator, funded by Carl Zeiss Foundation *2022-2028*

Intelligent Scene Understanding of Operating Room Video Streams
Principal Investigator, funded by Stryker Corporation *2021-2025*

Embodied Cognitive Robotics
Principal Investigator, funded by Eva Mayr-Stihl Foundation *2020-2022*

Brain Controlled Service Robots
Principal Investigator, funded by Cluster of Excellence BrainLinks-BrainTools *2020-2023*

From Learning to Relearning Algorithmic Fairness in Socially-Aware Robot Navigation
Principal Investigator, funded by Cluster of Excellence BrainLinks-BrainTools *2020-2022*

Intelligent System for Autonomous Monitoring of Production Plants in Industry 4.0
Principal Investigator, funded by Federal Ministry of Education and Research (BMBF) *2020-2022*

Sensor Systems for Localization of Trapped Victims in Collapsed Infrastructure
Principal Investigator, funded by Federal Ministry of Education and Research (BMBF) *2020-2022*

Open Deep Learning Toolkit for Robotics
Principal Investigator, funded by European Commission H2020 *2020-2023*

Robust Localization Using Deep Landmark Features
Co-Principal Investigator, funded by Samsung GRO *2017-2018*

Invited Talks

Plenary and Keynote Talks

IEEE/ITSS German Autonomy Summit - Keynote Talk, Munich, DE *Dec. 2025*
IEEE/RSJ International Conference on Intelligent Robots and Systems - Keynote Talk, Hangzhou, CN *Oct. 2025*
Brazilian Conference on Robotics - Plenary Talk, Belo Horizonte, BR *Apr. 2025*
IEEE IROS Workshop on Embodied Navigation to Movable Objects - Keynote Talk, Abu Dhabi, AE *Oct. 2024*
IEEE ITSC Workshop on Vision and Language Oriented Representation - Keynote Talk, Edmonton, CA *Sep. 2024*
11th International Conference on Signal Processing and Integrated Networks - Keynote Talk, New Delhi, IN *Mar. 2024*
14th International Conference on Cloud Computing, Data Science & Engineering - Keynote Talk, New Delhi, IN *Jan. 2024*
Bosch Distinguished Lecture on Machine Learning and Artificial Intelligence - Keynote Talk, Renningen, DE *Aug. 2023*
Edinburgh Center for Robotics and the Alan Turing Institute Symposium - Keynote Talk, Edinburgh, UK *Jun. 2023*
IEEE IV Workshop on Bridging the Gap between Map-based and Map-less Driving - Keynote Talk, Anchorage, US *Jun. 2023*
IEEE IV Workshop on Data Driven Intelligent Vehicle Applications - Keynote Talk, Anchorage, US *Jun. 2023*
Robotics & AI Research Conference - Keynote Talk, Rome, IT *Mar. 2023*
13th International Conference on Cloud Computing, Data Science & Engineering - Keynote Talk, New Delhi, IN *Jan. 2023*
ECCV Workshop on Map-Based Localization for Autonomous Driving - Keynote Talk, Tel Aviv, IL *Oct. 2022*
International Symposium on Robotics Research - Distinguished Speaker, Geneva, CH *Sep. 2022*
IEEE Intelligent Vehicles Symposium Workshop on Beyond Supervised Learning - Keynote Talk, Aachen, DE *Jun. 2022*
Robotics and Computer Science World Forum - Keynote Talk, Amsterdam, NL *Oct. 2021*
3rd International Workshop on Data Driven Intelligent Vehicle Applications - Keynote Talk, Nagoya, JP *Jul. 2021*
IEEE International Conference on Unmanned Systems - Plenary Talk, Harbin, CN *Nov. 2020*
AutoSens Conference - Keynote Talk, Brussels, BE *Jul. 2020*

Other Invited Talks

Technion AI & Robotics Seminar, Online *Jan. 2026*
KUIS AI Talks, Online *Dec. 2025*
ELLIIT Symposium on Robot Learning, Lund, SE *Nov. 2025*
Mila Robot Learning Seminar, Online *Nov. 2025*
IROS Workshop on Perception and Planning for Mobile Manipulation in Changing Environments, Hangzhou, CN *Oct. 2025*
CoRL Workshop on Safe and Robust Robot Learning for Operation in the Real World, Seoul, Korea *Sep. 2025*
Fraunhofer Technology Forum 2025: Automated Guided Vehicles and Mobile Robots, Stuttgart, DE *Sep. 2025*
Huawei Spatial Computing Workshop, Munich, DE *Jun. 2025*
IEEE IV Workshop on Workshop on Safe and Trustworthy Autonomous Driving, Cluj-Napoca, RO *Jun. 2025*
IEEE IV Workshop on Navigating Uncertainty: High-Integrity Localization, Mapping, and Perception, Cluj-Napoca, RO *Jun. 2025*
IEEE IV Workshop on Data-Driven Learning for Intelligent Vehicle Applications, Cluj-Napoca, RO *Jun. 2025*
INRIA Paris, Paris, FR *Jun. 2025*
MIT, Boston, US *Apr. 2025*
IEEE IROS Workshop on Interaction-aware Autonomous Systems, Abu Dhabi, AE *Oct. 2024*
Toyota TRACE Workshop, Leuven, BE *Sep. 2024*
Freiburg.ai, Freiburg, DE *Aug. 2024*
Halmstad University, Halmstad, SE *Jun. 2024*
Zebra Technologies AiLN Seminar, London, UK *Feb. 2024*
KION Group Research Series, Online *Feb. 2024*

Freiburg Robotics and Biology Conference, Freiburg, DE *Nov. 2023*
Freiburg-Oxford Workshop on Internal World Models in Animals, Humans, and AI, Freiburg, DE *Nov. 2023*
Summer School on Deep Learning for Autonomous Systems and Smart Cities, Aarhus, DK *May 2023*
KTH Royal Institute of Technology, Stockholm, SE *Nov. 2022*
TU Delft, Delft, NL *Nov. 2022*
Workshop on Embedded Optimization and Learning for Robotics and Mechatronics, Freiburg, DE *Oct. 2022*
Summer School on Continuous Engineering and Deep Learning for Trustworthy Autonomous Sys., Thessaloniki, GR *Oct. 2022*
Australian Centre for Field Robotics, Sydney, AU *Jun. 2022*
TU Nuremberg, Nuremberg, DE *Jun. 2022*
University of Bonn, Bonn, DE *May. 2022*
Sapienza University of Rome, Rome, IT *Apr. 2022*
Qualcomm Technologies, Online *Mar. 2022*
TU Graz, Graz, AT *Jan. 2022*
ICAR Workshop on Design, Learning, and Control for Safe Human-Robot Collaboration, Ljubljana, SL *Dec. 2021*
Universidad De Las Américas Puebla, Puebla, MX *Dec. 2021*
Bosch Corporate Research, Renningen, DE *Nov. 2021*
IROS Workshop on Open Deep Learning Toolkit for Robotics Prague, CZ *Sep. 2021*
Karlsruhe Institute of Technology, Karlsruhe, DE *Jun. 2022*
Robert Bosch, Heilbronn, DE *Mar. 2021*
Toyota Research Institute, Los Altos, US *Jul. 2020*
Wayve, London, UK *Jul. 2020*
Freiburg Center for Data Analysis and Modeling, University of Freiburg, Freiburg, DE *May 2020*
Sapienza University of Rome, Rome, IT *Mar. 2020*
Robert Bosch Center for Data Science and Artificial Intelligence, Chennai, IN *Sep. 2018*
Indo-German Workshop on Sensor Systems for Localization in Collapsed Infrastructure, New Delhi, IN *Sep. 2018*
Field Robotics Center Seminar, Carnegie Mellon University, Pittsburgh, US *Jul. 2018*
NVIDIA GPU Technology Conference Europe, Amsterdam, NL *Sep. 2016*
IEEE IROS Workshop on State Estimation and Terrain Perception, Daejeon, KR *Oct. 2016*
Field Robotics Center Seminar, Carnegie Mellon University, Pittsburgh, US *Jun. 2016*
Field Robotics Center Seminar, Carnegie Mellon University, Pittsburgh, US *Dec. 2013*
International Conference of Agricultural Engineering, Valencia, ES *Jul. 2012*
VIT Alumni Lecture, Vellore, IN *Jun. 2012*
The Indian Institute of Technology Madras, Chennai, IN *Jun. 2012*
Field Robotics Center Seminar, Carnegie Mellon University, Pittsburgh, US *Sep. 2010*
IEEE Resonance, VIT University, Vellore, IN *Jul. 2008*

Teaching Experience

Advanced Deep Learning - University of Freiburg, MSc, lecture *2024-Present*
Artificial Intelligence - University of Freiburg, MSc, lecture *2024-Present*
Machine Learning - University of Freiburg, MSc, lecture *2023-Present*
Introduction to Mobile Robotics - University of Freiburg, MSc, lecture *2022-Present*
Foundations of Deep Learning - University of Freiburg, MSc, lecture *2019-Present*
Deep Learning Laboratory - University of Freiburg, MSc, laboratory *2018-Present*
FreiCAR: Practical Autonomous Driving - University of Freiburg, MSc, laboratory *2020-Present*
Learning from Limited Supervision - University of Freiburg, MSc, seminar *2022-Present*
Robot Learning - University of Freiburg, MSc, seminar *2021-Present*
Deep Learning for Autonomous Systems - University of Freiburg, MSc, seminar *2020*
Self-Supervised Learning - University of Freiburg, MSc, seminar *2020*
Deep Learning for Autonomous Driving - University of Freiburg, MSc, laboratory *2018*
Robot Navigation - University of Freiburg, MSc, seminar *2015-2017*
Robot Perception - University of Freiburg, MSc, seminar *2015*

Massive Open Online Courses (MOOCs)

Foundations of Deep Learning I: Basics *AI Campus Link*
Foundations of Deep Learning II: Architectures & Methodology *AI Campus Link*
Foundations of Deep Learning III: Advanced Topics *AI Campus Link*

Advising and Mentoring

PhD Students (25 PhD Students)

Yao Lu	PhD	*11/2025-Present*
Nicolas Schischka	ELLIS PhD	*07/2025-Present*
Akshay L Chandra	PhD	*06/2025-Present*
Imen Mahdi	ELLIS PhD	*11/2024-Present*
Jiarong Wei	PhD	*06/2024-Present*
Liudi Yang	PhD	*05/2024-Present*
Mohamed Abdelsamad	PhD	*02/2024-Present*
Markus Käppeler	ELLIS PhD	*01/2024-Present*
Sajad Marvi	PhD	*10/2023-Present*
Fabian Schmidt	PhD	*09/2023-Present*
Maximilian Luz	ELLIS PhD	*07/2023-Present*
Sharang Kaul	PhD	*02/2023-Present*
Jan Ole von Hartz	PhD	*12/2022-Present*
Julia Hindel	ELLIS PhD	*09/2022-Present*
Nick Heppert	ELLIS PhD	*09/2022-Present*
Kürsat Petek	PhD (Co-advised)	*06/2022-12/2024*
Martin Büchner	PhD	*10/2021-Present*
Adrian Röfer	ELLIS PhD	*06/2021-Present*
Niclas Vödisch	ELLIS PhD (Co-advised)	*05/2021-06/2025*
Rohit Mohan	PhD	*05/2021-Present*
Christopher Lang	PhD	*11/2020-Present*
Eugenio Chisari	PhD	*09/2020-04/2025*
Nikhil Gosala	PhD	*07/2020-10/2025*
Daniel Honerkamp	PhD	*05/2020-04/2025*
Juana Valeria Hurtado Rincon	PhD	*11/2019-10/2025*

Senior Scientists and PostDocs (7 PostDoctoral Researchers)

Iman Nematollahi	PostDoc	*04/2025-Present*
Simon Bultmann	PostDoc	*10/2024-Present*
Lukas Luft	PostDoc	*08/2023-12/2024*
Daniel Büscher	PostDoc	*08/2023-12/2024*
Daniele Cattaneo	PostDoc	*01/2020-10/2025*
Paulo Drews-Jr	PostDoc (Capes-Humboldt Fellowship)	*08/2021-07/2024*
Tim Welschehold	PostDoc	*03/2020-Present*

Master Theses (51 Master Students)

Sidharth Suresh	Master Thesis	*2026*
Bastian Steffen Schnitzer	Master Thesis	*2025*
Jens Tobias Müller	Master Thesis	*2025*
Batin Muslu	Master Thesis	*2025*
Riya Mohan	Master Thesis	*2025*
Martin Peters	Master Thesis	*2025*
Alen Nasic	Master Thesis	*2025*
Noah Lenagan	Master Thesis	*2025*
Pranav Kolar Bhaskarpantula	Master Thesis	*2025*
Erich Choudhury	Master Thesis	*2025*
Melika Shekarriz	Master Thesis	*2025*
Abdelrhman Werby	Master Thesis	*2025*

Tim Steinke	Master Thesis	*2025*
Minh Quang Nguyen	Master Thesis	*2025*
Rishab Verma	Master Thesis	*2025*
Raphel Schneider	Master Thesis	*2025*
Mohammad Shannak	Master Thesis	*2024*
Tobias Heimbach	Master Thesis	*2024*
Sven Pfitzer	Master Thesis	*2024*
Amrutha Venkatesan	Master Thesis	*2024*
Aron Distelzweig	Master Thesis	*2024*
Simon Andreas Dorer	Master Thesis	*2024*
Ahmet Selim Canakci	Master Thesis	*2024*
Jonas Schramm	Master Thesis	*2023*
Sassan Mokhtar	Master Thesis	*2023*
Kiran Kumaraswamy	Master Thesis	*2023*
Elias Greve	Master Thesis	*2023*
Akshay Mirylkar	Master Thesis	*2023*
Abdallah Ayad	Master Thesis	*2023*
Nayana Koneru	Master Thesis	*2023*
Amith Boggram	Master Thesis	*2023*
Abhijeet Nayak	Master Thesis	*2023*
Markus Käppeler	Master Thesis	*2023*
Asmaa Khalid	Master Thesis	*2023*
Monish Reddy Nallapareddy	Master Thesis	*2023*
Kiran Kumaraswamy	Master Thesis	*2023*
Fabian Schmalstieg	Master Thesis	*2023*
Venkat Subramanyam	Master Thesis	*2023*
Jan Ole von Hartz	Master Thesis	*2022*
Francesco Peracchia	Master Thesis	*2022*
Lorenzo Mur Labadia	Master Thesis	*2022*
Suresh Guttikonda	Master Thesis	*2022*
José Arce y de la Borbolla	Master Thesis	*2022*
Jing Lu	Master Thesis	*2022*
Abdelrahman Younes	Master Thesis	*2021*
Sai Sourabh Tiruvaipati	Master Thesis	*2021*
Rohit Mohan	Master Thesis	*2021*
Borna Bešić	Master Thesis	*2021*
Manav Madan	Master Thesis	*2019*
Eduardo Alvarado	Master Thesis	*2019*
Johan Vertens	Master Thesis	*2016*

Visitors

Prof. Giovanni Beltrame	Visiting Professor	*2024*
Niyati Rawal	PhD Exchange Student	*2024*
Bhavesh Garg	Internship	*2024*
Mohammad Mohammadi	PhD Exchange Student	*2024*
Jiaye Yang	MSc Exchange Student	*2023*
Alvari Seppänen	PhD Exchange Student	*2023*
Harsh Mahesheka	DAAD-WISE Internship	*2023*
Abhinav Gupta	Internship	*2022*
Jasmeet Kaur	Internship	*2021*
Matteo Vaghi	Internship	*2020*
Jay Patravali	Internship	*2017*
Mayank Mittal	DAAD-WISE Internship	*2017*
Rohit Suri	DAAD-WISE Internship	*2017*
Himanshu Maurya	DAAD-WISE Internship	*2018*
Ankit Dhall	DAAD-WISE Internship	*2016*

Academic Activities

Editorial Services

Management Committee, IEEE Transactions on Robot Learning (T-RL) *2026-2027*
General Chair, German Conference on Pattern Recognition (GCPR) *2025*
Chair, IEEE Robotics and Automation Society (RAS) Technical Committee on Robot Learning *2021-Present*
Senior Editor, IEEE Robotics and Automation Letters (RA-L) *2024-Present*
Area Chair, Robotics: Science and Systems Conference (RSS) *2025-2026*
Area Chair, Conference on Robot Learning (CoRL) *2020-2025*
Guest Editor, IEEE Transactions on Robotics (T-RO) *2024-2025*
Guest Editor, Sensors Journal, Special Issue on Sensing and Semantic Perception in Autonomous Driving *2021*
Associate Editor, International Journal of Robotics Research (IJRR) *2023-Present*
Associate Editor, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) *2020-Present*
Associate Editor, IEEE International Conference on Robotics and Automation (ICRA) *2020-Present*
Associate Editor, International Symposium on Robotics Research (ISRR) *2022-Present*
Associate Editor, IEEE International Conference on Advanced Robotics (ICAR) *2021*
Associate Editor, IEEE Robotics and Automation Letters (RA-L) *2019-2023*
Senior Program Committee Member, International Joint Conference on Artificial Intelligence (IJCAI) *2021-Present*
Program Committee Member, AAAI Conference on Artificial Intelligence, Student Abstract and Poster Program *2020-2023*
Program Committee Member, Conference on Robot Learning (CoRL) *2019-2020*
Program Committee Member, Robotics: Science and Systems (RSS) *2020-2021*
Program Committee Member, 24th European Conference on Artificial Intelligence (ECAI) *2020*
General Co-chair, RSS Pioneers, Robotics: Science and Systems Conference (RSS) *2019*

Workshop & Tutorial Organization

Resilient Off-road Autonomous Robotics, Robotics: Science and Systems Conference (RSS) *2025*
Label Efficient Learning Paradigms for Autonomy at Scale, IEEE/RSJ Int. Conference on Intelligent Robots and Systems *2024*
Interaction-Aware Autonomous Systems, IEEE/RSJ Int. Conference on Intelligent Robots and Systems (IROS) *2024*
RoboNerF: Neural Fields in Robotics, IEEE International Conference on Robotics and Automation (ICRA) *2024*
Mobile Manipulation and Embodied Intelligence, IEEE International Conference on Robotics and Automation (ICRA) *2024*
3D-Deep Learning for Automated Driving, IEEE Intelligent Vehicles Symposium (IV) *2020-2023*
Open and Trustworthy Deep Learning for Robotics, IEEE/RSJ Int. Conference on Intelligent Robots and Systems (IROS) *2022*
Perception and Navigation for Autonomous Robotics in Unstructured and Dynamic Environments, IEEE/RSJ IROS *2022*
AI Driving Olympics, Conference on Neural Information Processing Systems (NeurIPS) *2021*
Scene Understanding for Unstructured Environments, DAGM German Conference on Pattern Recognition (GCPR) *2021*
Self-Supervised Robot Learning, Robotics: Science and Systems Conference (RSS) *2020*

Reviewing

Project Proposals

European Commission, German Research Foundation (DFG), Swiss National Science Foundation (SNSF), German Academic Exchange Service (DAAD), Luxembourg National Research Fund (FNR)

Journals

International Journal of Robotics Research (IJRR), International Journal of Computer Vision (IJCV), IEEE Transactions on Robotics (T-RO), IEEE Transactions on Neural Networks and Learning Systems (TNNLS), Robotics and Autonomous Systems (RAS), IEEE Robotics and Automation Letters (RA-L), IEEE Robotics & Automation Magazine, Journal of Field Robotics (JFR), International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI), IEEE Transactions on Industrial Electronics (T-IE), IEEE Transactions on Multimedia (T-MM), Sensors

Conferences

Conference on Robot Learning (CoRL), IEEE Conference on Computer Vision and Pattern Recognition (CVPR), IEEE International Conference on Computer Vision (ICCV), Robotics: Science and Systems (RSS), IEEE International Conference on Robotics and Automation (ICRA), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), International Conference on Field and Service Robotics (FSR), International Symposium on Robotics Research (ISRR), European Conference on Mobile Robotics (ECMR), International Conference on Advanced Robotics (ICAR), German Conference on Pattern Recognition (GCPR), International Conference on Intelligent Robotics and Applications (ICIRA)

External Ph.D. Committee Memberships

KTH Royal Institute of Technology, Sweden *2026*
Karlsruhe Institute of Technology, Germany *2025, 26*

RMIT University, Australia *2025*
University of Modena and Reggio Emilia, Italy *2025*
Inria Paris, France *2025*
Technical University Eindhoven, Netherlands *2024*
Halmstad University, Sweden *2024*
Technical University of Munich, Germany *23, 24, 25, 26*
The University of Sydney, Australia *2023*
German Research Centre for Artificial Intelligence, Germany *2023*
TU Delft, Netherlands *2022, 25*
University of Bonn, Germany *2021, 25, 26*

Other Activities

IEEE Autonomous Agent Alignment Working Group (VT/AVSC/AAA-WG), Founding Member *since 2024*
ELIZA Unit Freiburg, Director & Board Member *since 2025*
ELIZA, Scholarships & PhD Admissions Committee Member *2023-2024*
ELLIS Unit Freiburg, Founding Faculty *since 2020*
BrainLinks-BrainTools Center, Member and Principal Investigator *since 2019*

University Departmental Services

- **Admissions Committee Member**, MSc. Computer Science Program, University of Freiburg
- **Organizing Committee Member**, Robotics: Science and Systems (RSS) 2019
- **Organizing Committee Member**, International Conference on Sensors and Related Networks 2007
- **Public Spaces Committee Member**, Field Robotics Center, Carnegie Mellon University

Consultancy Activities

Advisory Board Member, EU Horizon Europe EVENTS project *2023-Present*
Industry Advisory Activities, NDA *since 2022*

Publications

Peer-Reviewed Journal and Conference Articles

[1] M. Abdelsamad, M. Ulrich, B. Yang, M. Zhang, Y. Miron, and A. Valada, "Dos: Distilling observable softmaps of zipfian prototypes for self-supervised point representation learning," *AAAI Conference on Artificial Intelligence (AAAI)*, 2026.

[2] J. V. Hurtado, R. Mohan, and A. Valada, "Hyperspectral adapter for semantic segmentation with vision foundation models," *IEEE Robotics and Automation Letters (RA-L)*, 2026.

[3] F. Schmidt, N. M. K. Abdul Nazar, M. Enzweiler, and A. Valada, "Enhancing llm-based autonomous driving with modular traffic light and sign recognition," *IEEE Intelligent Vehicles Symposium (IV)*, 2026.

[4] R. Buchanan, A. Röfer, J. Moura, A. Valada, and S. Vijayakumar, "Online estimation and manipulation of articulated objects," *Autonomous Robots*, 2026.

[5] A. Röfer, R. Buchanan, M. Argus, S. Vijayakumar, and A. Valada, "Efficient learning of object placement with intra-category transfer," *IEEE Robotics and Automation Letters (RA-L)*, vol. 11, no. 1, pp. 442–449, 2026.

[6] J. K. Rai, A. Valada, A. K. Dubey, and A. Abdelgawad, Eds., *Emerging Trends in Artificial Intelligence and Machine Learning*. Springer Singapore, 2026.

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