Intelligent and Interactive Systems

Making robots learn to perceive and act with understanding

At IIS we enable autonomous robots to perceive and act flexibly and robustly in unstructured environments, leveraging machine learning methods to build perceptual, motor and reasoning skills.

We seek to answer the question: *How can we enable robots to acquire the knowledge and understanding they require to interact sensibly with unstructured environments?*

Our research addresses complete perception-action loops, from computer vision to grasping and manipulation, using reactive algorithms and/or cognitive models. Much of our work uses machine learning to enable robots to synthesize and improve complex and robust sensorimotor behavior with experience.

Working With Us

- Check our thesis topics for Bachelor and Master students.
- Notice for non-EU/EEA prospective Master students
- We do not currently have any open PhD positions. If you'd like to work with us starting in summer 2027, apply via the ELLIS PhD Program by 2026-10-31.



Group picture taken at our 2026 retreat at Maria Waldrast.

News

2026-09-27	Justus Piater co-organizes the RoBoWoMo: Bridging the Gap between Neural and Symbolic World Models for Robot Planning, Reasoning, and Action.
2026-08-23 – 2026-08-28	David J. Crandall, Dirk Nowotka, Justus Piater, and Katrin Schöning-Stierand co-organize the Dagstuhl Seminar 26351 on Digital Transformation of Research and Digital Centers in the Science Landscape.
2026-05-20	Simon Haller-Seeber appears in the media: Digitale Bildung aktiv erleben: Der RoboCupJunior Austrian Open 2026 in Tirol. (Interview im Rahmen des RoboCup Junior Austrian Open)

2026-05-07	Justus Piater is a panelist at a public discussion on Invited expert interview on “Human-robotics relations: What does the future hold?”, Innsbruck. (Public event organized by the Department of Media, Society and Communication, Universität Innsbruck)
2026-04-15	Justus Piater gives an invited talk *Some Latest Results in Robot Learning of Structure by Interaction* at Austrian Robotics Workshop, Leoben. (Annual workshop of the GMAR; at AIRoV 2026)
2026-04-08	Simon Haller-Seeber and Justus Piater co-organize the RCJ2026 - Robocup Junior Austrian Open: 08.-10.4.2026.
2026-04-08	Justus Piater gives an invited talk *Generative KI: Funktionsweise, Möglichkeiten und Grenzen* at SchulleiterInnen-Tagung „IT-Sicherheit und KI-Einsatz in der Schule“, Pädagogische Hochschule Tirol. (Veranstaltung für Schulleitungen der Bildungsdirektion für Tirol) [Abstract]
2026-03-31	Samuele Tosatto gives an invited keynote *Accelerating Reinforcement Learning with Off-Policy Data: Promises, Pitfalls, and Future Directions* at Reinforcement Learning For Autonomous Accelerators 2026, Liverpool. [Abstract]
2025-11-19	Justus Piater gives an invited talk *Structural Understanding – The Grand Challenge of Robot Learning* at ELLIIT Focus Period Symposium: Robot Learning, Lund University. (The ELLIIT Focus Period Symposium is the highlight of the five-week focus period, during which young international scholars, ELLIIT researchers and other well-established international academics gather in Lund to work together on joint research challenges.) [Abstract]
2025-09-18	Samuele Tosatto gives an invited keynote *Where are all the intelligent robots? A quest for efficiency in reinforcement learning* at Reinforcement Learning Bootcamp 2025, Salzburg. [Abstract]

Older News

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