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. Related areas of interest include human-robot interaction, image and video analysis, and visual neuroscience.

Working With Us

- We are hiring 1 Postdoc and 3 PhD Students in Robot Learning.
- Check our thesis topics for Bachelor and Master students.
- Notice for non-EU/EEA prospective Master students

Group picture taken at our 2024 retreat at Meissner Haus.

News

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	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]
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]
2025-07-15	Justus Piater gives an invited keynote *Making robots learn to perceive and act with understanding* at The 12th ECCOMAS Thematic Conference on Multibody Dynamics, Innsbruck. [Abstract]
2025-07-11	Justus Piater and Alejandro Agostini give an invited talk *Learning Symbols and Abstractions in Robot Planning* at Abstraction: Language - Science - Engineering, Bolzano. (International Workshop)
2025-04-25	Simon Haller-Seeber gives an invited talk *AI-powered tools for real-time transcription and translation in action: A self-hosted open-source framework for digital spaces.* at Medien - Wissen - Bildung 2025: Streifzüge an den Nahtstellen von Medien, Bildung und Philosophie, Universität Innsbruck.
2025-04-10	Simon Haller-Seeber gives an invited keynote *Hands-on Approaches to Software, Robotics, and AI: Exploring Experiments and Science in Action* at European Conference on Educational Robotics (ECER 2025), HTL Anichstrasse.
2025-04-10	Simon Haller-Seeber and Christopher Kelter teach a tutorial *Was sind Roboter, was macht eine KI? Entwickle deine eigene KI und programmiere unsere Minibots* at Campustag BG/BRG Sillgasse, Universität Innsbruck.

Older News

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How to find us: See the directions.