

# 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 may accept up to two Ph.D. students via the [ELLIS](#) PhD Program, to start during the second half of 2023. [Apply](#) by 2022-11-15.
- Check our thesis topics for [Bachelor and Master students](#).



Group picture taken at our 2022 retreat in Obergurgl

## News

- 2023-01-21 Justus Piater appears in the media: [Auch ein Roboter muss höflich sein](#). (Interview by Die Presse (in German))
- 2022-12-19 Marko Zaric and Simon Haller-Seeber teach a tutorial *Einführung in die Programmierung mit dem BBC Micro:Bit* at Campustag NMS Hötting, Universität Innsbruck.
- 2022-12-06 Justus Piater, Matteo Saveriano, Hector Villeda, and Erwan Renaudo appear in the media: [Schritt für Schritt](#). (Zukunft Forschung - Das Magazin für Wissenschaft und Forschung der Universität Innsbruck 2 (2022)) [\[Abstract\]](#)
- 2022-12-01 Justus Piater, Erwan Renaudo, and Matthias Schurz appear in the media: [Mithilfe der Psychologie: Forscher wollen Robotern soziale Fähigkeiten beibringen](#). (Interview by Innovation Origins) [\[Abstract\]](#)
- 2022-11-17 Simon Haller-Seeber gives an invited talk *STAIR-Lab Workshop One and Outlook* at [INNALP Education Hub Beiratssitzung](#), Universität Innsbruck.
- 2022-07-21 Justus Piater appears in the media: [„Es regnet, weil Menschen die Schirme aufspannen“ – warum wir \(noch\) keine allzu große Angst vor künstlicher Intelligenz haben müssen](#). (Makademia - Forschung einfach geknackt)
- 2022-06-14 Justus Piater co-organizes the [Austrian Robotics Workshop](#).
- 2022-06-10 Simon Haller-Seeber, Patrick Hofmann, and Thomas Gatterer 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.
- 2022-06-02 Erwan Renaudo contributes a talk *Deep Learning for Fast Segmentation of E-waste Devices' Inner Parts in a Recycling Scenario* at [ICPRAI 2022](#), Paris/online. [\[Abstract\]](#)
- 2022-05-20 Justus Piater appears in the media: [ORF Tirol Podcast \(in German\)](#). [\[Abstract\]](#)

[Older News](#)

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