

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 currently have [one open PhD position](#).
- Check our thesis topics for [Bachelor and Master students](#).



Group picture taken at our 2022 retreat in Obergurgl

News

- Justus Piater and Joanna Chimiak-Opoka teach a tutorial *Generative KI in 5 Minuten; Bilder erstellen mit KI* at [Wie verwende ich KI? KI-Schnupperworkshop für Einsteiger:innen](#), Stadtbibliothek Innsbruck. (Öffentliche Veranstaltung im Rahmen der Vortragsreihe DiSCussion des Digital Science Centers, organisiert gemeinsam mit dem Vizerektorat für Digitalisierung und Nachhaltigkeit)
- 2024-06-05
- Justus Piater appears in the media: „KI hat nur so viel Macht, wie wir ihr geben“: [Sind die Warnungen übertrieben oder realistisch?](#). (Newspaper article in Tiroler Tageszeitung)
- 2024-06-01
- Justus Piater gives an invited colloquium *Making robots learn to perceive and act with understanding* at [Cognitive Science Colloquium](#), Universität Tübingen. [\[Abstract\]](#)
- 2024-05-28
- Justus Piater appears in the media: [KI: Viel Leistung, aber kein Verstand](#). (Newspaper article in Wiener Zeitung) [\[Abstract\]](#)
- 2024-04-28
- Justus Piater appears in the media: Denn sie weiß (noch) nicht, was sie tut. (Newspaper article in Tiroler Tageszeitung supplement on artificial intelligence) [\[Abstract\]](#)
- 2024-04-27
- Justus Piater gives an invited keynote *Generative KI: Möglichkeiten und Grenzen* at [eFuture-Day Sek. 1](#), Pädagogische Hochschule Tirol. [\[Abstract\]](#)
- 2024-04-25
- Justus Piater gives an invited keynote *Generative KI: Möglichkeiten und Grenzen* at [eFuture-Day Sek. 2](#), Pädagogische Hochschule Tirol. [\[Abstract\]](#)
- 2024-04-24
- Justus Piater gives an invited talk *Möglichkeiten der KI bei klangrelevanten Arbeitsschritten im Fertigungsprozess* at Digitalwissenschaftlicher Bildungsnachmittag, Musikinstrumentenbauschule Mittenwald.
- 2024-04-22
- Justus Piater co-organizes the [AIRoV – The First Austrian Symposium on AI, Robotics, and Vision 26.-27.3.2024](#).
- 2024-03-26
- Simon Haller-Seeber, Christopher Kelter, and Patrick Hofmann 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.
- 2024-03-21

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