

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

- A [PhD student position](#) is available.
- Check our thesis topics for [Bachelor and Master students](#).



Group picture taken at our 2022 retreat in Obergurgl

News

- 2024-03-14 Justus Piater gives an invited talk *The IMAGINE Project: Robot Intuition and Understanding for Disassembly* at [Adaptive Robotics for Recycling of Electronic Devices](#), Rimini, Italy. (Workshop at the European Robotics Forum)
- 2024-03-14 Justus Piater co-organizes the [Adaptive Robotics for Recycling of Electronic Devices](#).
- 2024-01-16 Samuele Tosatto gives an invited talk *Beyond Monte Carlo Off-Policy Policy Gradient* at [Mini-Workshop on Reinforcement Learning](#), University of Mannheim.
- 2023-12-01 Justus Piater is a panelist at a public discussion on [15. Europäischer Mediengipfel](#), Lech/Arlberg. (Wissenschaftsforum zum Thema „Künstliche Intelligenz – Fluch oder Segen für Politik, Medien, Wirtschaft und Wissenschaft?)
- 2023-11-24 Justus Piater gives an invited talk *Demystifying ChatGPT* at [UIBK Digital Leadership Club](#), Innsbruck.
- 2023-11-13 Justus Piater gives an invited talk *ChatGPT: Wie es (nicht) funktioniert* at [Wie „denkt“ ChatGPT? Begegnungen mit einer Künstlichen Intelligenz](#), Stadtbibliothek Innsbruck. (Öffentliche Veranstaltung im Rahmen der Vortragsreihe DiSCussion des Digital Science Centers, organisiert gemeinsam mit dem Vizerektorat für Digitalisierung und Nachhaltigkeit)
- 2023-11-11 Justus Piater gives an invited talk *Wie kann die Medizin von der Künstlichen Intelligenz profitieren?* at [Winterfortbildung der Universitätsklinik Gynäkologie und Geburtshilfe Innsbruck](#), Wattens.
- 2023-10-24 Justus Piater gives an invited lecture *Ramping Up Robot Intelligence* at [ReconCycle Summer School 2023](#), Cala Ratjada, Mallorca, Spain.
- 2023-09-06 Justus Piater gives an invited lecture *High-Level AI For Service Robotics* at [GMAR Robotics Summer School 2023](#), FH Technikum Wien.
- 2023-08-15 Samuele Tosatto contributes a talk *A Continuous-Time Option Framework* at [International Workshop of Intelligent Autonomous Learning Systems 2023](#), Hirschegg, Kleinwalsertal, Austria. (Research talk about arXiv:2212.04407)

[Older News](#)

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