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

- Check our thesis topics for Bachelor and Master students.

Group picture taken at our 2024 retreat at Meissner Haus.

News

2025-04-03	Justus Piater gives an invited keynote *What is AI really?* at Cross-Border Seminar: AI in Law and Practice: Regional Perspectives on European Rules, Universität Innsbruck.
2025-03-06	Justus Piater teaches a tutorial *Funktionsweise, Möglichkeiten und Grenzen von KI* at Lieber gleich berechtigt als später: Hallo KI, hilfst du uns bei der Gleichstellung?!, Tiroler Bildungsinstitut Grillhof Vill. [Abstract]
2025-01-31	Justus Piater gives an invited lecture *High-Level AI For Autonomous Robots* at ELIAS-ELLIS-VISMAC Winter School 2025, Brunico, Italy. [Abstract]
2025-01-22	Justus Piater gives an invited lecture *Generative Künstliche Intelligenz: Funktion, Fähigkeiten und Fallen* at VO 720453 Spezielle Themen der Persönlichkeits- und Differentiellen Psychologie, Universität Innsbruck. (Gastvorlesung)
2025-01-22	Justus Piater gives an invited keynote *Was heißt hier KI?* at Kontroversen in Gynäkologie und Geburtshilfe, Zürs am Arlberg.
2024-12-06	Justus Piater gives an invited keynote *2025: Was bringt die Technik Neues?* at wAIke Up: Kaffee mit KI, Ágnes-Heller-Haus, Universität Innsbruck. (Kurzvortrag)
2024-11-21	Antonio Rodríguez-Sánchez teaches a tutorial *Neural Networks for Generative AI und Biologically-Plausible Neural Networks* at FFG-Innovationscamp BioGenDesKI – Bioinspiriertes & generatives Design, online. (Tutorial)
2024-11-20	Justus Piater teaches a tutorial *Introduction to Neural Networks; Attention-based and Multi-Modal Neural Networks* at FFG-Innovationscamp BioGenDesKI – Bioinspiriertes & generatives Design, online. (Zwei Tutorials)
2024-11-11	Justus Piater gives an invited keynote *Generative KI: Funktionsweise, Möglichkeiten und Grenzen* at KI in der Berufsbildung – Herausforderungen und Chancen, online. (Online-Impulsreihe der Pädagogischen Hochschule Tirol) [Abstract]
2024-10-19	Justus Piater appears in the media: Künstliche Intelligenz. (Interview im Rahmen der Sendereihe NextGen auf Tirol TV)

Older News

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How to find us: See the directions.

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