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.

Bachelor students: **Want to create artificial intelligence for autonomous robots?** Want to join our interdisciplinary LFUI team to compete in the 2020 RoboCup@Work competition? Take the Introduction to Robotics course in the winter semester 2019-20!





Group picture taken at our retreat in Obergurgl

News

2019-11-03	Justus Piater, Philipp Gschwandtner, and Simon Haller appear in the media: Österreich-Bild: Bits und Berge - 350 Jahre Forschung in Innsbruck; TV Documentary by ORF 2 (in German).
2019-10-23	Simon Haller appears in the media: TV interview by ORF 2 Tirol Heute (in German).
2019-07-17	Matteo Saveriano contributes a talk *From Intuitive Skill Transfer to Large-Scale Robotic Knowledge Bases*, DiSCourse - The Digital Science Seminar Series, Department of Computer Science, University of Innsbruck.
2019-07-15	David Peer contributes a talk *Vector Routing in Capsule Networks*, School of Learning, Perception and Robotics (SPROuT), Department of Information Engineering and Computer Science, University of Trento.
2019-07-15	Sayantan Auddy contributes a talk *Progress, Compress and Expand - A framework for lifelong learning of robotics tasks*, School of Learning, Perception and Robotics (SPROuT), Department of Information Engineering and Computer Science, University of Trento.
2019-07-15	Justus Piater contributes a talk *Towards Open-Ended Robot Learning*, School of Learning, Perception and Robotics (SPROuT), Department of Information Engineering and Computer Science, University of Trento.
2019-07-15	Matteo Saveriano contributes a talk *Learning Structured Robotic Tasks via Human Imitation*, School of Learning, Perception and Robotics (SPROuT), Department of Information Engineering and Computer Science, University of Trento.
2019-07-12	Simon Haller and Nicolas Stolz appear in the media: Sport und Roboter gehen Hand in Hand (in Liechtensteiner Vaterland).
2019-07-04	Simon Haller teaches a tutorial *Introduction to Prototyping autonomous Robots using the Robot Operating System (ROS)*, Institut für Informatik, Universität Innsbruck.

2019-06-27 Simon Haller teaches a tutorial *Künstliche Intelligenz und Robotik - Ein Überblick und Reality Check*, Campustag NMS Götzis, Institut für Informatik, Universität Innsbruck.

Older News

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