
Austrian Robotics Workshop – Tactile Robotics

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Editorial Note

Recent advances in artificial intelligence, in particular in large language models (LLMs) and reinforcement learning, have driven remarkable progress in autonomous robotic systems. These developments have proven especially impactful for complex motion generation in compliant robots and humanoid platforms.

Despite this progress, dexterous and sensitive object manipulation, as well as proficient tool use, remain among the central unsolved challenges in robotics. This is particularly evident in the development of artificial hands and humanoid robots that aspire to human-like dexterity, fine-grained tool handling, and safe, physically interactive contact with human counterparts. Bridging this gap requires not only refined mechatronic design, but also a tight coupling between perception, control, and learning, with tactile sensing emerging as a key enabling modality.

Against this background, the Austrian Robotics Workshop 2026 is dedicated to the rapidly evolving and increasingly industry-relevant field of tactile robotics. The workshop addresses central scientific and technological challenges along the entire value chain – from tactile sensor technologies, industrial end-effectors, and tactile gripper systems, to the control of grasping, manipulation, and physical interaction tasks – with a particular emphasis on industrial applicability.

Over the years, the workshop has established itself as a platform for scientific discourse and as a venue for exchange and networking between academia, research institutions, and industrial partners. The scientific contributions collected in these proceedings reflect the breadth of the field and address, among others, the design, integration, and performance of tactile sensors embedded in robotic manipulation devices such as hands and grippers; the control and regulation of grasping and manipulation based on tactile information; the mechatronic design of tactile grippers and end-effectors; and industrial applications of tactile robotics, in particular in the domain of textile manipulation and sorting.

Taken together, the contributions in this volume offer a snapshot of the current state in tactile robotics research of the Austrian robotics community and envision promising directions for future research and industrial deployment. Beyond reporting recent advances, the collected papers aim to inspire new ideas, collaborations, and applications at the intersection of academia and industry.