

Invited Talk: Interactive Language Instructable Robot Learning

Time: June 13 @ 15:00–16:15 | Location: Theresienstr. 90 (N4 Building), Room N2409 | Zoom: <http://tiny.cc/lsv-talks>

Invited Speaker

Dr. Oier Mees

Short Bio

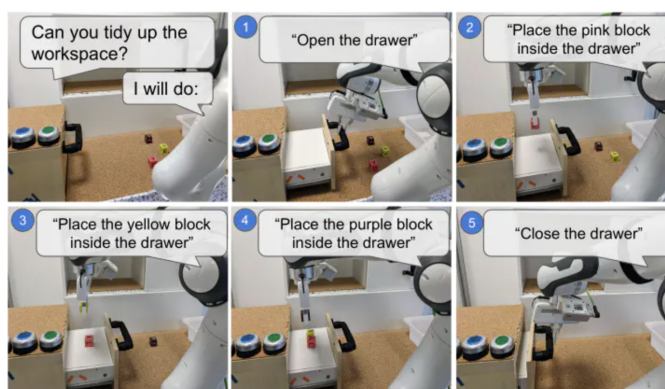


Oier obtained his Ph.D. in Computer Science in 2023 from Prof. Dr. Wolfram Burgard's group at Freiburg University. His research lies at the intersection of robot manipulation and deep learning with the goal of enabling machines to interact intelligently with the physical world and humans while improving their performance over time. Oier is particularly interested in scaling robot learning systems to autonomously acquire general-purpose knowledge that allows them to compose long-horizon tasks by following unconstrained language instructions. He recently received the 2023 AI Newcomer award from the German Federal Ministry of Education and Research and the German Informatics Society. His work "CALVIN: A Benchmark for Language-conditioned Policy Learning for

Long-horizon Robot Manipulation Tasks" was recognized as the 2022 IEEE Robotics and Automation Letters Best Paper, and the work "Grounding Language with Visual Affordances over Unstructured Data" was nominated for the Best Paper Award in Robot Learning at ICRA 2023.

Abstract

Despite considerable progress in robot learning, and contrary to the expectations of the general public, the vast majority of robots deployed out in the real world today continue to remain restricted to a narrow set of preprogrammed behaviours for specific tasks in controlled industrial settings. As robots become ubiquitous across human-centred environments, the need for "generalist" robots grows: how can we scale robot learning systems to autonomously acquire general-purpose



knowledge that allows them to perform a wide range of everyday tasks in unstructured environments based on arbitrary instructions from the user? This talk will be focused on Oier's recent works that demonstrate how we can relate human language to a robot's perceptions and actions by leveraging self-supervision and structural priors from uncurated data to enable sample-efficient learning of language-conditioned manipulation and navigation tasks.