

## Team NimbRo Rescue at DARPA Robotics Challenge Finals

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The video shows the compacted first-day run of team NimbRo Rescue at the DARPA Robotics Challenge Finals in Pomona, CA. It features the mobile manipulation robot Momaro which has a flexible base with four legs that end in steerable wheels. Momaro can drive omnidirectionally and step over obstacles. The robot is equipped with an anthropomorphic upper body with two 7 DoF arms that end in four-finger grippers. A 3D laser scanner and multiple cameras capture the environment. Operator interfaces include a steering wheel and a gas pedal for car driving, a joystick for omnidirectional locomotion, and a head-mounted 3D immersive display with two 6 DoF magnetic hand trackers for solving complex manipulation tasks. Through Momaro, our team solved seven of the eight tasks of the DARPA Robotics Challenge: driving a car, egressing the car, opening a door, turning a valve, cutting a hole into a drywall, traversing debris, and a surprise task, which was to operate a big switch. All this was done in only 34 minutes. Team NimbRo Rescue was the best European team, coming in 4th in the overall ranking.

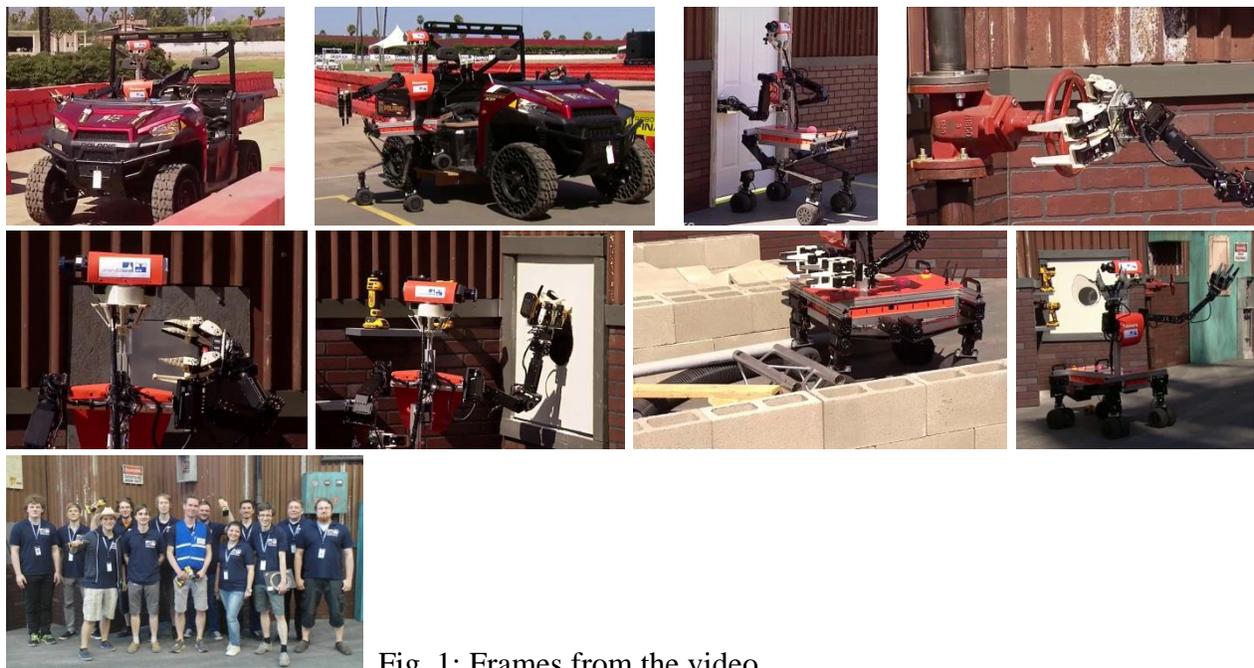


Fig. 1: Frames from the video.