Workshop on Humanitarian Robotics

Organizers

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Sponsors

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All workshop content can be found at <u>www.humanitarianrobotics.com</u>.

Abstract: Robots have become more and more common in High-Income Countries (HICs) but use in Lower- and Middle-Income Countries (LICs and MICs, respectively) is virtually nonexistent. While this lack of use is not surprising to most people, there are many issues facing these communities where robots could make a huge impact. Consider Cambodia, one of the most unexploded ordnance contaminated countries in the world, robots could be used to keep humanitarian demining and explosive ordnance disposal technicians out of harm's way. In India, where traffic congestion can be severe, drones could be used to increase the speed of supplies to first responders – this also has application in rural communities in the United States. In post-disaster relief, like recent events in Haiti or Indonesia, robotic devices could be used for infrastructure inspection and search and rescue missions. In these cases, and many more, robots could be the difference between life and death.

The application and success of robots in LICs and MICs is not just a matter of the specific robotic technology being available or feasible, but also involves a broad range of environmental, cultural, structural, political, socio-economic and resource constraints that are critical to consider when developing robots and other technologies for LICs and MICs. A fundamental reason behind failure of technology solutions in LICs and MICs is that there exists a disconnect between technology developers (e.g., academic researchers and companies) and humanitarian field workers and the communities they work in. Developers rarely know what tools humanitarian workers in-the-trenches need and sometimes don't even know what the critical problems are that need to be solved. Only humanitarian field workers know what is needed and what solutions are truly sustainable. This workshop will bring together roboticists, policy makers, representatives from funding agencies, and humanitarian field workers to share their expertise and experience with each other and the greater IROS community.

This digital workshop will focus on understanding the problems that exist in humanitarian engineering and how best to approach them with robotic technologies. This will be achieved through keynote talks focused on specific projects discussed in the broader humanitarian robotics context, short talks about various ongoing projects, panel discussions focused on funding, policy, and the perspectives of field workers, and guided networking. In the end, we hope that this workshop will result in new ideas and connections that will spur the development of robotic solutions to some of the most difficult challenges in the humanitarian world.