



Robots from Pathways to Crowds

Ethical, Legal and Safety Concerns of Robots Navigating Human Environments.

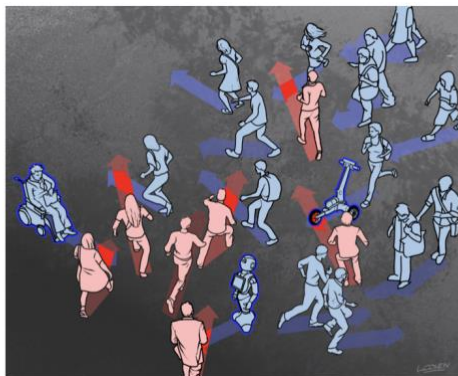
RO-MAN 2020, 29th IEEE International Conference on Robot and Human Interactive Communication

Date: August 31, 2020

Place: VIRTUAL (Free access)



<https://epfl.zoom.us/j/92588790768> / Meeting ID: 925 8879 0768



The focus of this workshop is on “Crowdbots”, that is, robots that share the floor with pedestrians, including any robot with semi/autonomous mobile capabilities designed to perform tasks in public places (i.e., carry loads, move people around or provide assistance) and the safety, ethical and legal challenges that we will face and should be considered for achieving these robots in our society.

Invited Talks:

Hazards deriving from properties of the public environments

Tadayuki Kanda, Kyoto Univ. Japan

Psychological safety

Elizabeth Broadbent, Univ. of Auckland, New Zealand

Safe Physical Human-Robot Interaction

Sami Haddadin, Technical University of Munich, Germany

Responsible Research and Innovation

Rene Von Schomberg, European Commission, BELGIUM

Social-robot accident investigation

Carl Macrae, Nottingham University Business School, UK)

Topics of Interest

- Active perception for intention and action prediction
- Uncertainty modelling in human motion prediction
- Robot-crowd Navigation
- Human-robot interaction in unstructured environments
- Autonomous driving robots
- Robot control and navigation
- Safety of robot operation
- Human safety measures for mobile robots
- Human-robot collision
- Safety concerns and standards for mobile robots
- Ethical issues in human-robot interaction
- Ethical and legal frameworks for robot deployment

We welcome contributions that address any technical topic related to Service Robots Navigating in unstructured environments with humans. Equally, contributions that address concerns for safety, ethical and legal questions in decision making for autonomous navigation and system design.

Organizers:

Diego Paez-Granados, Pericle Salvini, Aude Billard, Tom Carlson, and Julien Pettre
EU Horizon 2020 Project: CROWDBOT safe robot navigation in dense crowds.

Further Information: <http://crowdbot.eu/workshop-roman2020/>



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Workshop Schedule – All TIMES CEST

8:30 - 8:45	Welcome coffee (Opening virtual space and connection for audience) Videos of Crowdbot topics
8:45 - 9:00	Welcome Address CROWDBOT: Robots from Pathways to Crowds
9:00 - 9:30	Prof. Takayuki Kanda (University of Kyoto, Japan) Hazards deriving from properties of the public environments
9:30 - 9:35	<i>Short talk 1: Anna M. H. Abrams (RWTH Aachen University, Germany)</i> <i>Field observation: interactions between pedestrians and a delivery robot</i>
9:35 - 10:05	Prof. Elizabeth Broadbent (The University of Auckland, New Zealand) Psychological safety, focusing on hazards deriving from low levels of perception
10:05 - 10:10	<i>Short talk 2: D.G. Sorrenti (Univeristy of Milan, Italy)</i> Interaction autonomous vehicle - pedestrian: dynamic vehicle behaviour as a function of subjective safety perception
10:10 - 10:15	<i>Short talk 3: Luca Marchionni (PAL Robotics, Spain)</i> Robot control and navigation: ARI's autonomous system
10:15 - 10:45	Prof. Sami Haddadin (Technical University of Munich, Germany) How to reduce the risks of contact ensure safe contacts between humans and robots
10:45 - 10:50	<i>Short talk 4: Diego Paez-Granados (EPFL, Switzerland)</i> Physical Safety in Collisions Between Robots and Pedestrians
10:50 - 11:00	VIDEO DEMO EPFL: Qolo Robot / Locomotec: CuyBot / ETHZ: Pepper Robot / UCL Wheelchair
11:00 - 11:05	<i>Short talk 5: Janderson Ferreira (POLI-UPE, Brazil)</i> Analysis of CNN encoder and Deep Reinforcement Learning to Active Learning in Social Robotic Navigation
11:05 - 11:35	PhD Rene Von Schomberg (EU Commission, UK) Ethics for responsible research and innovation
11:35 - 11:40	<i>Short talk 6: Ben Wright (US Naval Research Laboratory, US)</i> Crowd Polarization as Environmental Alignment Heuristic
11:40 - 11:45	<i>Short talk 7: Henry Eberle (UCL, UK)</i> Autonomy vs. Safety in Shared Control Crowd Navigation
11:45 - 12:15	Prof. Carl Macrae (Nottingham University Business School, UK) Social-robot accident investigation, from expertise on ethical hazards
12:15 - 13:00	Open Discussion with Speakers and Audience