

Please read the following text carefully.

Afterwards we will ask you to draw a CAM around the predefined knotpoint:

"Which risks and benefits come to your mind when considering the use of robots in search and rescue missions?"

Rescue robots are a relatively new field of technology designed to search and rescue human beings in disaster situations (earthquakes, collapsed buildings, contaminated areas, etc.). Rescue robots, including drones and ground robots, can operate in dangerous and contaminated areas that are otherwise inaccessible to human rescuers. By performing tasks such as visually inspecting damaged structures, searching for victims, creating maps of the affected area, clearing debris, delivering essential supplies, and autonomously assisting in the rescue of victims, these robots can enhance the efficiency and effectiveness of rescue operations.

While robots for search and rescue are still in the development phase, it is important to consider the ethical aspects (risks and benefits) of these technologies.

Robots for Search and Rescue Missions

Benefits of robots for search and rescue missions might be:

- Access to areas unreachable or too dangerous for human rescuers
- Consistent and reliable performance, especially for tasks that require precision and accuracy
- Autonomous rescue capabilities, allowing robots to carry and transport victims to safety

Possible risks of soft robots for search and rescue missions might be:

- Algorithms guiding soft robots may be biased, leading to unfair or discriminatory outcomes, regarding (i) where to concentrate rescue efforts, (ii) whom to search for first, (iii) who should be given priority treatment, (iv) who must be left to wait
- The level of autonomy in SAR operations might raise the question, if remote control of robotic operations is preferable to full autonomy in precarious situations
- Rescue robots could be misused, particularly in conflict zones for activities such as bomb deployment.

Third Page in Experiment

Currently, the development of robots for search and rescue missions is still in the development phase. You can contribute to the development of ethically safe robots for search and rescue missions. As we proceed, we will ask you to consider risks and benefits regarding robots for search and rescue missions and to draw a CAM around the knot point: *"Which risks & benefits come to your mind when considering the use of robots in search and rescue missions?"*

**Please read the following information on soft robots carefully.
Afterwards we will ask you to adjust your CAM.**

Currently, there is a trend towards using a new type of so-called soft robots for search and rescue missions. Soft robots are a new kind of robot which are designed to mimic the properties of living entities such as animals. Unlike normal robots, which are typically composed of hard materials like metal or hard-plastic, soft robots do not have electronic devices in them and are made of flexible, soft materials like silicone. They often have natural shapes and can bend, twist, and stretch like living organisms, such as snakes or octopi. Designed with inspiration from living entities, these soft robots often look and feel more lifelike than rigid robots.

Soft Robots for Search and Rescue Missions

Benefits of soft robots for search and rescue missions might be:

- Access to areas unreachable or too dangerous for human rescuers
- Delivery of essential supplies (water, food, medicine) until victims are safely extracted
- Reduced risk of injury to victims due to their flexibility and adaptability

Possible risks of soft robots for search and rescue missions might be:

- Algorithms guiding soft robots may be biased, leading to unfair or discriminatory outcomes, regarding (i) where to concentrate rescue efforts, (ii) whom to search for first, (iii) who should be given priority treatment, (iv) who must be left to wait
- The soft and adaptable nature of soft robots could potentially create challenges in ensuring the safety and reliability of the robot in hazardous environments
- Rescue robots could be misused, particularly in conflict zones for activities such as bomb deployment

Third Page in Experiment (Intervention)

Given the information on soft robots, we invite you to **adjust** your CAM regarding the risks and benefits of utilizing soft robots for search and rescue missions. We are interested in knowing if the softness or rigidity of a robot influences your evaluation of its suitability for search and rescue missions, based on the information available on soft robots.