Learning robots to rescue

The RoboCup Rescue as training ground

Visser, A.

Citation for published version (APA):
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Arnoud Visser

Challenge
- After a disaster a team of robots must explore the devastated city. Ambulances have to find as many victims as possible, dig them out and bring them to a hospital. Fire fighters have to extinguish fires before the situation goes out of hand. Police can help to patrol and explore, but can also clear the road for the other agents.

Results
To apply Bayesian games to realistic RoboCup Rescue scenario’s, the decision making is decomposed into a high-level Bayesian game and low-level MDP:

Bayesian Game approximations make it possible to bridge the gap to coordination problems encountered in benchmarks as the RoboCup Rescue. Modeling that each robot has a certain amount of private information, next to a certain amount of common knowledge, is a natural assumption. Also online planning is natural in such dynamic situations.

References

More information: http://wiki.robocup.org/Rescue_Simulation_League