

Creeps Rescue Team

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Introduction

RoboCupRescue problem is defined as to simulate an urban disaster. There are agents that are used to rescue the civilians and the city. These agents are ambulance teams, police forces, fire brigades and the centers. These agents are able to act on the disaster area in the simulation system.

As there are houses and buildings damaged by the disaster, they might burn and then collapse. Each fire can spread to the near buildings. One of the goals is to stop the fires from spreading and destroying the buildings.

There are some civilians injured in the disaster and they must be saved or they might die or get caught in fire. Also most roads are blocked and need sweeping so that our agents could move in them.

The Creeps rescue team formed a year ago in order to present a new look to the rescue simulation problem and maybe try to develop the methods of thinking on this problem.

Rescue simulation could be a very important issue and one of the most realistic and the most usefull competition in RoboCup.

The solution in simple words

To overcome these obstacles we have revised a solution. The basis of this solution is on the simple neural network algorithm, with some help from machine learning (ML) algorithm.

The best way for saving the remains of the city was for all agents to work separately from each other and yet communicate with each other in crucial moments. In other words while working completely separate, yet they have to work as a team and they have to be assigned and classified to positions.

To gain the goals mentioned, we used neural network algorithm as the base of each agent so that it would work as a single unit but completely functional in a team. Also to gain a full companionship, yet not more than needed we use the ML algorithm.