Smart Rescue and Firefighter Machine (SRFM)

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Today, many countries are experiencing fires, environmental and natural disasters. As a result, firefighters and rescuers are used. But often they themselves become victims of such natural phenomena. Nowadays, technologies are actively developing in all industries. To facilitate and secure the work of firefighters, I suggest replacing them partially with robots that are able to work autonomously and are radio-controlled. Software and hardware design has four main components, including interaction with its peripheral devices, control of its motors and servos, navigation system (GPS module), and strong pumps, for the purpose for which it is necessary to put out. Using highly sensitive sensors and sensors, I have developed a model for the transmission of the information at the current time. For example, the level of gas and fog, the degree of radiation, temperature, and humidity. Also using the ESP-32 camera, workers can observe, for example, the state of the house, which is burning from the inside, and quickly determine the location of a person in order to save him and save time searching. Along with these essential tasks, there were other design constraints such as size, speed, and power supply. Using as Arduino main system chip, and Raspberry Pi, I settled these problems and wrote an algorithm in programming languages C/C++. The mission is simplified and divided into smaller ones. Each task is implemented in the most efficient way, using the best algorithms and methods as well as the AI system (artificial intelligence). Technologies are created for convenience and sometimes for the conservation of human life. With this device, we can ensure the protection and safety of our heroes at the global level and save the lives of many citizens.

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