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Towards Development of an Image Processing Based Autonomous Firefighting Robot

Salman Anwar[1], Yasir Anwar[1], Inam-Ul-Haq[2], Naveed Anwar[1], Abdul Raziq[1], Shabbar Naqvi[1], Mohammad Idrees[1], Fiaz Notani[1], Jalal shah[1], Sohrab Khan[1]
[1]Department of Computer Systems Engineering, Balochistan UET, Khuzdar, Pakistan
[2]Ministry of Religious Affairs and Inter-Faith Harmony, Government of Pakistan
Corresponding Email: yasiranwar921@gmail.com

***Abstract*—In this age of technology as the world is moving towards 4th industrial revolution, the robots have made a real change and ease to work parallel with human beings to foster their needs. The challenging part of life comes where human face a lot of hazards. One of the examples is occurrence of fire because fire hazard that can result in loss of precious human life and it is expected that robots can deal these situations better than human. In this work, an autonomous robot prototype has been developed that tracks its path to detect the fire and extinguish it. To control the robotic vehicle autonomously, an Arduino microcontroller has been used. This robot works with image processing which needs a camera to detect fire more effectively rather than using an ordinary flame sensor. It contains a water pump to spray on detected fire flame. In future, the prototype Robot will be tested on different real world scenarios and data will be analyzed. The ultimate aim is to develop an autonomous firefighting Robot available for home and commercial use.**

***Keywords* —Image processing, Raspberry Pi, Arduino**