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## **Image-Based Fire Detection System Using Deep Learning**

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**Abstract.** Existing Sensor-based fire detection system used in these days has limited performance because of several factors defined by people such as the distance between the sensor and the point of fire. Accordingly, some image-based fire detection systems are proposed to overcome these problems. But those systems may alert for fire when images containing objects which are similar to fire such as light bulb were given. Because people define the features which are used when determining the fire in traditional system, those errors can be made. In this paper, it proposes a system detecting the fire using deep learning. When a client sends an image to the server, it determines if the image represents the fire or not. In this paper, it introduces the image-based fire detection method using convolutional neural network. For the datasets, including images containing fire, images with light or illumination which are similar to fire are used not to be confused about the images representing object like fire.

**Keywords:** artificial intelligence, deep learning, convolutional neural network, fire detection.

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