Ideation Phase

Literature

survey

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Project Name	Emerging Methods For Early Detection Forest Fires
Maximum Marks	2 Marks

Emerging Methods for Early Detection of Forest Fires.

Forest fire is a type of fire that starts as small fire at small area and gradually turns into a hugefire due to some favorable conditions such as presence of dry trees, grasses and strong winds. If the information about the fire is send early to the authority responsible for controlling, the fire can be prevented from getting into huge fire. The activities of human such as charcoal burning or smoking can cause fire to occur in the forest. The condition that can trigger fire in the forest is broken glasses that act as collective lens focusing sun light on a small spot for a length of time (Alkhatib 2015). The emissions of fine particles can cause respiratory and cardiovascular problems (Zhang et al. 2008). The best way to fight against forest fire is to early detection of forest fire. These fires are a constant threat to ecological systems of forests and human safety especially in regions with hot climate (Zhao et al. 2015). It was also found that 13 million hectares of forest are affected by the fire every year approximately. The main problem is when the forest fire becomes large it is very difficult to put out.

Many researches are done for monitoring and detecting forest fire with the help of wireless sensor networks. In 2013 researchers proposes the use of the WSN in transmitting the raw data into acontrol system (Bolourchi et al. 2013). The WSN technology can be used to detect the forest fire in its early stages. A number of sensor nodes must be pre-deployed in a forest. Different types of raw data's, such as temperature, humidity and pressure are sensed by these sensors. These data's are sentin ad-hoc manner to a sink node. The sink node transmits the received data to the control center via a transport network. The problem to be taken into account is the delay of the transmitted data to the control center and an efficient algorithm can be used for performing the routing of information in a less time. The evolution is the process by which various kinds of living organisms got developed from earlier form of their existence. Inspired by the natural evolution of the organisms, evolutionary computation came into existence. An evolutionary algorithm abides the natural evolution of the species in the earth. The evolutionary algorithm is used for solving real time multiple objective problems and optimization problems. Since the evolutionary algorithms gives optimal solution, it is widely used in solving large scale problems (Kalaiarasi et al. 2014). Many such algorithms are designed to solve real time problems such as selective breeding algorithm that selects the more appropriate population to build a new generation (Sriramya et al. 2013).

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