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(57) Abstract :

Tooth disorder is caused due to many factors. Cavities are 225 the most common type of tooth disorders. Bacteria in the mouth, sipping sugary beverages, not keeping the teeth clean can lead to tooth decay or caries. Ignoring them could lead to serious complications in the future. The four main types in teeth are Incisors, Canines, Premolars and Molars. Generally, if one is facing any teeth related problems they tend to go to a dentist. Since, many tend to neglect the 230 problems when they have symptoms, we are proposing to design and build a device containing image sensor, microcontroller, Wi-Fi module with other components which can come of use in predicting the disorder. CMOS Image Sensor is used to acquire images of the teeth. A microcontroller is used to control the device by the user or whoever it is concerned. Image Processing is a method involving operations on an image, to get an enhanced image or to extract 235 useful or critical information from it. It is in fact a type of signal processing. In image processing, digital image processing techniques can be used to manipulate digital images via an image processing tool. Convolutional Neural Network (CNN) is a type of artificial neural network, it is widely used for image/object recognition and classification, and it is also an algorithm among various deep 240 learning models. Colour texture matching can also be of use in this context. A set of sample images for model training is also being looked upon to be used in the project. With the help of the device that we are proposing to build, early symptoms which might lead to dental disorders can be predicted. The device shall be good in detecting and analyzing dental related problems using CNN and 245 image processing comprehensively as mentioned.

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