A Smart Device to Protect Children from Heat Stroke in Confined Spaces

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Children trapped in confined spaces such as cars could be badly affected due to oxygen exhaustion along with a heat stroke due to increase in temperature. Normal Oxygen level is 21%, and levels below 18% cause suffocation followed by loss of consciousness which leads ultimately to death. Normal body temperature varies per person, age, activity and time of the day. However, the average normal temperature is generally 37C. In general, humans will suffer hyperthermia after 10 minutes in extremely humid conditions that are above 60C heat. Even short periods of high temperature can cause serious health problems. Several studies report fatalities and serious health-threats in confined spaces and particularly in locked cars due to heat strokes and suffocation. This invention project aims to develop a system that is easily integrated into cars' setup in order to eliminate and reduce the potential of having such incidents and hence saves lives and health. The system that is developed for this approach is composed of thermal camera for complete mapping of the confined space. The Thermal map that is produced is utilized to identify any human pattern or living being. In fact, this system, which is based on Arduino microcontroller works upon any detection of human patterns. Consecutively, an alarm is activated, ventilation system is automatically run; such as opening car windows or turning on air-conditioners, alert messages are sent consecutively to the responsible person over the period of the next few minutes then, finally followed by a message to the emergency service center if no response or action was detected.