Ph.D. Research Proposal

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Tentative Title of Proposed Research Topic: - Wearable Sensor System for Child Abuse Protection and Recognition

Today in the current global circumstances, the main question in every parent's mind, considering the ever rising increase of issues on child harassment in recent past is mostly about their safety and security. The existing application is programmed and encumbered with all the required data which includes children behavior and reactions to different situations like anger, fear and apprehension. This generates a signal which is transmitted to the smart phone and the action will be taken through the nearest police station. The problem of this application is the accuracy, importance and the priority of the data being sent to the parents.

Wearable sensors are widely used in all the technical, communication and medical fields. The wearable sensors are more accurate and reliable in data collection for people activities and behavior. Thereby it ensures the safety of the women and children.

The proposed system will have cluster of multiple devices comprising of a wearable **"Smart band", "Smart wearable ornament" and "Smart Wearable collar".** The system consists of body pressure sensing belt, motion sensing watch, Sound sensing ornaments, collar camera and Indoor/outdoor positioning mobile phones. These sensors are all connected by wireless communication. The blood pressure sensor which sends the collected data back to the cloud and the data are being analyzed. When the data rate reaches above the threshold value it instructs the collar camera to activate for environment monitoring. Based on the environmental study, the captured images will be forwarded back to the nearest police station and safety measures will be ensured.

The system will be programmed to endlessly monitor the subject's parameters and take action when any risky situation presents itself. It does so by detecting the change in the monitored signals, following which appropriate action is taken by means of sending notifications/alerts to designated individuals. The proposed system will help the **Indian Ministry of Women and Child Development to** achieve the mission.

Keywords:

Wearable Sensor, Cloud Computing, Wireless Communication, Sensors, Child Safety