An exploration of the utility of affective response in SenseCam archives

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SenseCam-based lifelogs capture details of personal events from peoples' lives which can be used by the individuals in various ways or shared with others. When gathered over an extended period these lifelogs become vast data archives. Locating interesting events from within these archives is challenging, but an important research question to be addressed in order to make these collections useful and usable. One potential source of information to identify events of importance to an individual is their affective state during the capture of the information. Previous work has shown an individual's biometric response to be related to their overall arousal levels. Significant or important events tend to raise an individual's arousal level, causing a measurable biometric response. We propose that events which are important to an individual at the time they occur may be useful to the individual again in the future. We further propose that such incidents are associated with emotional responses that can be detected by measuring an individual's biometric response when experiencing these events. Thus recording biometric response as part of a lifelog may enable us to identify important events in a lifelog. We examined the utility of using biometric response to identify significant and memorable events from lifelogs, and the role of these events in self reflection. Self reflection is an important adult process leading to further self awareness and development. Self reflection is often opportunistic, triggered by something that someone mentions or an artifact seen, and can lead an individual to relive past events, possibly gaining further insight into them self as an individual. While lifelogs may afford new possibilities for self reflection, due to their sheer volume and the number of years they may span means to automatically extract this information is important. We believe that employing biometrics, and the insights into an individuals affective state which they offer, might not only allow us to identify

important moments within SenseCam archives but may also offer a source complimentary to the SenseCam through which introspection can be empowered.

Our presented exploration uses 3 subjects' 1 month SenseCam collections annotated with biometric data. Subjects were presented with events from their SenseCam collections with varying associated biometric response and questionnaires completed to determine if biometric response corresponded with memorable-ness, significance and utility in self reflection of events. Post questionnaire interviews were then conducted. Experiment results show preliminary relationship between SenseCam event importance and biometric response, and indicate that biometric records may serve as a good enabling technology for applications supporting self reflection.