Utilizing AI to Reduce the Risk of SIDS

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According to a study by the Centers for Disease Control and Prevention [CDC] (2020), there are around 3,500 sudden unexpected infant deaths (SUID) each year. Accidental suffocation or strangulation in bed and Sudden Infant Death Syndrome (SIDS) are among the top three reported causes of SUIDs (CDC, 2020). The purpose of this project was to create a device that detects when a baby is in a position that can potentially lead to suffocation and notifies the baby's caregiver when this happens. A block diagram and flowchart were created to plan and organize the hardware and software processes needed to construct the device. Tensorflow, an open-source software platform, was utilized to train a model. 7,624 images were used as examples to train the model with. The model was then uploaded to a Google AIY Vision kit. A Python script was also written and uploaded to the device to direct the device to warn the caregiver of the detected dangerous situations. In 10 trials, the device was tested on two baby dolls posed in different sleeping positions to ensure the accuracy and reliability of the device. Through these trials, the device demonstrated a 98.3% rate of accuracy. Thus, this device successfully reduces the risk of suffocation and saves lives.

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