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Mobile on-board vehicle event recorder: MOVER

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Abstract

The rapid development of smart-phone technology in recent years has led to many smart-phone owners owning out-of-date devices, equipped with useful technologies, which are no longer in use. These devices are valuable resources that can be harnessed to improve users' lives. This project aims at leveraging these older, unused devices to help improve road safety, specifically through the improved response time of emergency services to accident locations. An Android application — Mobile On-board Vehicle Event Recorder (MOVER) — was designed and built for the purpose of detecting car accidents through the use of acceleration thresholds. Driving data was gathered and crash simulations were run. With this data, testing and analysis were conducted in order to determine an acceleration threshold that separates normal driving from accident situations as accurately as possible. With this application, users can leverage their previous or current mobile devices to improve road safety - for themselves, and their area as a whole. A promising level of accuracy was achieved, but significant improvements can be made to the application. Large opportunity for future work exists in the field, and hopefully through the development of this application, other researchers may be more inclined to investigate and test such future work.