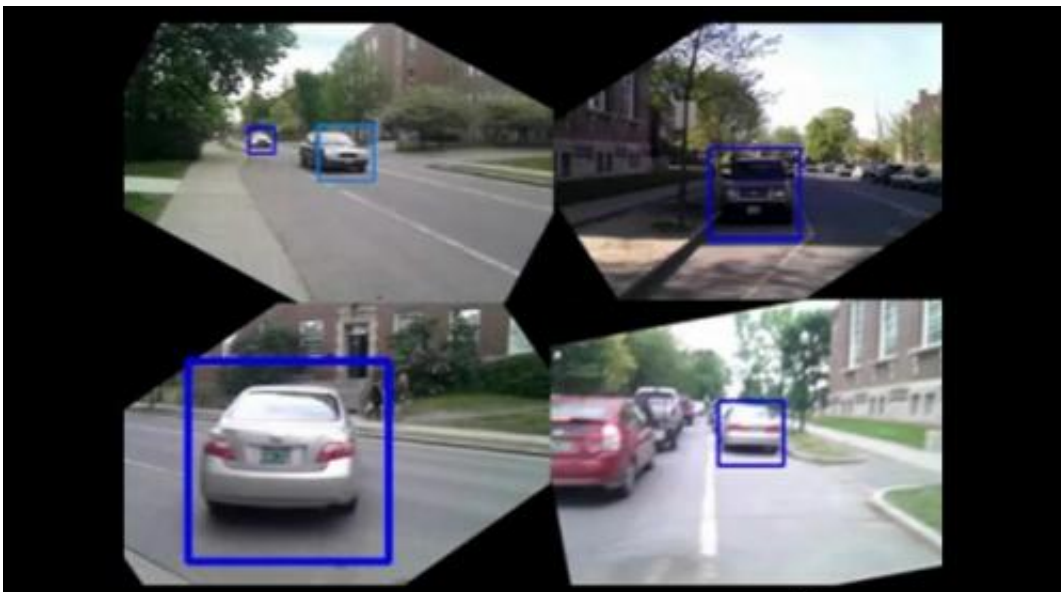# WalkSafe app shields smartphone pedestrians (w/ video)

November 28 2011, by Nancy Owano

(PhysOrg.com) -- Smartphone users who as pedestrians are not very smart about crossing and looking both ways now have a protective shield in the form of an Android app which they can download for free. A research team from Dartmouth College and the University of Bologna, Italy, are offering their new app, WalkSafe, which uses the camera on a smart phone to detect oncoming traffic. The phone then alerts the user.

Tianyu Wang, Giuseppe Cardone, Antonio Corradi, Lorenzo Torresani,

Andrew T. Campbell Dartmouth College-University of Bologna Mobile Sensing Group are the developers. Using a Nexus One phone, the researchers were able to demonstrate that the WalkSafe app can reliably detect oncoming cars as far as 50 meters away. The app relies on machine-learning and image-recognition algorithms to identify the fronts and backs of vehicles. The app takes into account varying light conditions, phone tilt, and blur, for an accurate picture of the road.

The phone transmits a loud vibration to warn the pedestrian of oncoming cars. WalkSafe can be downloaded for free through the Android Market.

Andrew T. Campbell, professor of computer science at Dartmouth, is head of the Smartphone Sensing Group which worked on the app; he had working experience in the software industry on the development of operating systems and wireless networks previously. At Dartmouth, his work is focused on smartphones as devices that can be used to sense, inform and persuade people, he says, about their health and well-being.

Similarly, his Smartphone Sensing Group, which began working on mobile phone sensing in 2006, is still asking the question, "How do we make smartphones even smarter?" which is their working goal. They have gone on to build sophisticated mobile sensing apps and systems. Included in the numerous developments listed on the group's site are the Neural Phone, EyePhone, and Darwin Phones.

"Smartphones are open and programmable and come with a growing number of powerful embedded sensors, such as an accelerometer, digital compass, gyroscope, GPS, microphone, and camera, which are enabling new sensing applications across a wide variety of domains such as social networks, mobile health, gaming, entertainment, education and transportation.," says the group.

The App Store and Market both as application delivery channels, they

say, "have transformed plain old cell phones" into far more interesting app-phone devices that are capable of downloading a variety of apps instantly.

The group plans to continue working on the app, to speed up the recognition algorithm.

More information:
Lab page: sensorlab.cs.dartmouth.edu/
The app on the Android market: [market.android.com/details?id= …](market.android.com/details?id=) artmouth.cs.walksafe

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