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Harvard Tests Smartphones for Demining

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Harvard Tests Smartphones for Demining

A team of researchers, composed of professors, a recent graduate from Harvard College, and a postdoctoral associate from the Harvard School of Engineering and Applied Sciences (SEAS), presented a research and technology paper at the Conference on Human Factors in Computing Systems entitled "Evaluating a Pattern-Based Visual Support Approach for Humanitarian Landmine Clearance." The conference was held 7–12 May 2011 in Vancouver, British Columbia.

The R&D findings presented in the paper discuss a new and innovative method for landmine identification—using smartphones. Currently, deminers sweep a metal detector over an object and, by listening to the beeps of the detector; create a mental image of the outline of the object. Using this new smartphone technology, known as pattern enhancement tool for assisting landmine sensing (PETALS), deminers are able to see an image created on a smartphone, such as an iPhone, that is attached to the metal detector. Each time the detector passes over an object, a red dot is represented on the screen of the smartphone. After several passes, a complete image is produced to give the deminer a more comprehensive view of what is in the ground. This technique may help reduce the need to remove every piece of metal clutter that is detected.

This technology is not only expected to improve search techniques, but it is cost-effective and can be used as a training tool for new deminers. During the initial testing, deminers who used the visual aid missed 80 percent fewer mines than those not using the device. The cost-effectiveness of the technology is especially vital in developing countries. Beginner deminers are expected to benefit from the technology as well because the visual image will improve their knowledge and recognition of landmines. The PETAL technology seeks to enhance the deminer's toolbox by adding a simple, inexpensive, readily available tool to identify landmines. ♦

[Click here](#) to view the final paper.

~Ivy Hensley, CISR staff

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