

# Smartphone app helps you find friends in a crowd

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Can a smartphone app enable meaningful, face-to-face conversation? Engineers are trying to find out, with software that helps people locate their friends in a crowd – and make new friends who share similar interests.

The software, called eShadow, makes its debut at the IEEE International Conference on Distributed Computing Systems (ICDCS) on Thursday, June 23 in Minneapolis.

It uses nearby wireless networks and smartphones' wireless communication technologies to alert users that a friend who also uses the software is in the area – and gives directions to that friend's location.

Dong Xuan, associate professor of computer science and engineering at Ohio State University, hopes that his research group's software will also build bridges between strangers who share personal or professional interests.

At a business meeting such as ICDCS, for example, the software could remind a user of a forgotten acquaintance's name, or help him or her make new professional contacts in the same area of research.

Since it enables face-to-face meetings, eShadow is a complement to online social networks such as Facebook, which excel at connecting people who are far apart, Xuan said.

"Today, online social networking has advanced dramatically, but our ability to meet people face-to-face hasn't gotten any easier," he said. "We want eShadow to close social gaps and connect people in meaningful ways, while keeping the technology non-intrusive and protecting privacy."

The name eShadow comes from the idea that users input their interests into the software, and their smartphone broadcasts those interests to certain other users of the software – but only within 50 yards of the phone. So as users move, the broadcast follows them around like a shadow.

As to users' safety, Xuan feels that, at least for some situations, meeting someone in person is safer than meeting them online.

"Online, people can steal others' identity, or lie easily without detection. It's much harder to pull off a masquerade in person," he said.

Plus, users only share information which they want to share, and can observe potential friends at a distance before deciding whether to introduce themselves. Young people, Xuan pointed out, are especially comfortable with putting personal information online, and could readily adapt to using the software.

That said, people can be selective about who they wish to receive their eShadow signals. Users can select individuals from their phone's contact list, and specifically de-select people as well.

"Say I'm from Ohio State, and someone else is from the University of Michigan, so I don't want to talk to them. I just tell the software to ignore anyone who says they're from Michigan," Xuan laughed.

The researchers' biggest challenges concerned efficient use of wireless

communication, explained doctoral student Jin Teng. He and his colleagues wrote algorithms that let smartphones send and receive eShadow signals quickly, but without overwhelming a network.

In outdoor tests on the Ohio State campus, they measured how fast the software could detect users who were 20, 30, and 50 yards apart. They tested different numbers of users, from two to seven.

In all cases, the software was able to connect people within about half a minute – an average of 25 seconds for two users, and 35 seconds for seven.

Xuan noted that eShadow's algorithms could be useful beyond socializing. Soldiers could use something akin to eShadow to locate each other on the battlefield.

Presently, the software works best when people move infrequently. Xuan and his research group are enhancing it to better accommodate motion. They are also extending it from Windows Mobile to support multiple [smartphone](#) platforms such as Android, and exploring opportunities for publicly releasing the [software](#) in the near future.

Provided by The Ohio State University

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