Science & Technology

Is This Thing On?

Electrical engineering professor Dan Ellis creates a "life log."

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Every day for nearly two years, associate electrical engineering professor Dan Ellis attached a $100 MP3 digital audio recorder to his belt as soon as he left for work. He'd record his entire day — even in the face of uneasiness from some colleagues and several counter clerks. His wife, in fact, banned the recorder in the house because she found it "creepy." By the time he retired the device in March 2006, Ellis had amassed some 2000 hours of audio recordings, stored on 15 DVDs.

Ellis is one of many computer scientists and engineers who are creating what have come to be known as "life logs." Ellis began his project, funded in part by a grant from Microsoft, because of how cheap and easy it is to collect digital audio. "It's an awful lot of information about what's going on in your life," says Ellis. "I just had the sense that this data has to have something useful in it." Ellis had begun to investigate how the recordings could be used to generate statistics and track patterns of his daily life. But lately his attention has focused on speech recognition and its capability to give inaccessible data like MP3 files a search function as quick and easy as most e-mail providers now have.

A speech-recognition program would be invaluable to any professional setting, providing a veritable transcription of the workday. With it, colleagues could bounce ideas around freely and fluidly, uninterrupted by the burden of jotting everything down. The scientist, the writer, the musician, or any professional who relies on brainstorming could speak his thoughts out loud into the recorder, assured that they could be quickly accessed later. As an engineer, Ellis understands the value of being able to retrace steps, rehypothesize, and begin again. "I like the idea of having an artificial backup of my thinking so that a lost thought might be salvaged," he says.

This was the vision of electrical engineer Vannevar Bush, the godfather of life logging. In 1945, Bush described in the *Atlantic Monthly* the memex, as in “memory extender,” a device that never came into existence but has continued to serve as an inspiration. It was imagined as a personal microfilmed library, “in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility.” By marking a code on the microfilm, the memex could create cross-references among multiple sources. This is not far from what a Web site’s hyperlinks do today, but the memex would have also tracked a person’s flow of ideas, something Ellis believes speech recognition can help accomplish. A lost thought could be salvaged just by typing in a keyword and recalling its entire conversation.

As they exist today, speech-recognition programs are effective when a person is speaking directly into a telephone receiver but have less success with deciphering a sidewalk conversation in New York City. Ellis, therefore, has the additional task of developing a program that can recognize and separate ambient noise from foreground voices. “For a recorded piece of music, the program we’re developing can get it right 70 percent of the time,” he says. “But for outdoors, it can only get it 20 percent of the time, which is still better than guessing, right? That’s the direction we’re going.”

In a greater sense, the direction we’re going is toward a digital database composed of all kinds of information about our lives, including books, cards, CDs, letters, memos, papers, photos, pictures, presentations, and home movies as well as audio life logs. Such are the items in the personal archive of another life logger, Gordon Bell, a researcher at Microsoft’s Media Presence Research Group. “Ideally, you want to integrate many different kinds of information,” Ellis explains. “So, it would be your e-mail, the Web site pages you visit, the documents on your computer, your phone conversations, and your face-to-face conversations.”

Such a program would solve a problem that has troubled Ellis since his graduate days at MIT. Frustrated by how little work he accomplished, Ellis would write down exactly what he was doing every 15 minutes. It was a sort of rudimentary life log, an effort “ to try to get some handle on where all the time was going.”

For Ellis’s sake, let’s hope it doesn’t take a lifetime of work to find out.

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