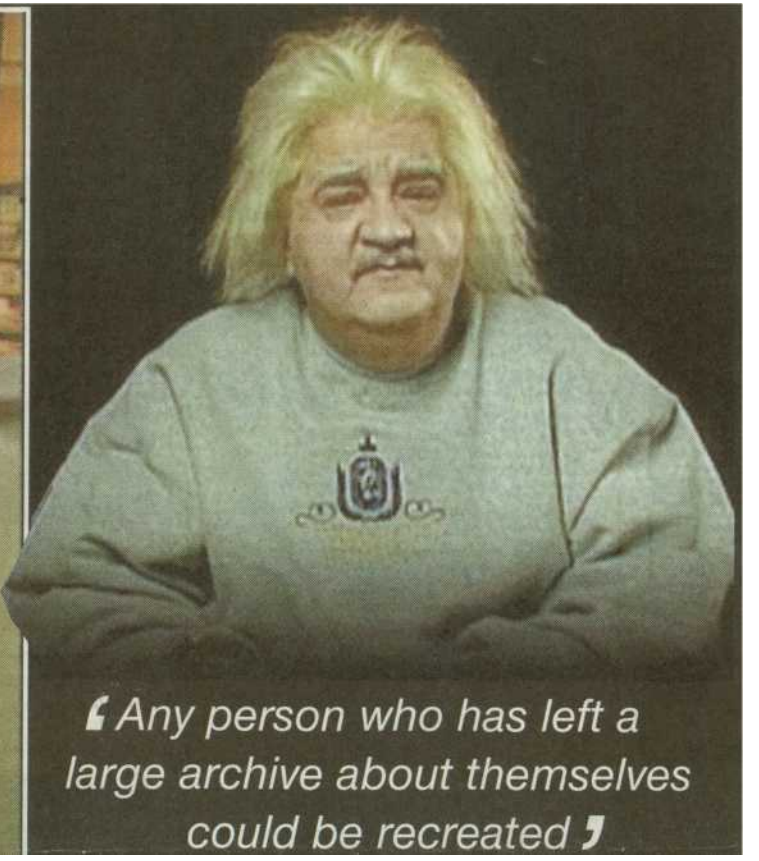

An audience with a legend: schoolchildren have already been holding conversations with a virtual Albert Einstein, who is created from video footage shot with the actor Jerry Mayer, above

Einstein comes to life on screen

CREATING a computerised version of oneself for future generations to interact with on a computer could soon be possible with a new PC system, *writes Mark Prigg.*

The technology has been used to create a virtual Albert Einstein that allows users to hold a conversation with the physicist, who died in 1955.

The system has been created by the Carnegie Mellon university in Pittsburgh, and uses several new technologies, including voice recognition, video databases and advanced search engines.

Scott Stevens, one of the creators of the system, believes it may even be used to make computerised teachers we can talk to.

"We have already created a system using a neurologist. It works better than any CD-Rom teaching package - you can actually have a conversation with it," says Stevens.

The Einstein system comprises more than five hours of video footage, shot with an actor, Jerry Mayer, who has written a one-man play about the life of Einstein.

Hundred of articles, books and even several plays about Einstein have also been incorporated into the system's huge database.

The system is able to understand speech, and to work out exactly what information the user is asking for.

By using a search engine specially developed for the project, it can instantly sift through the thousands of documents and video clips, finding those relevant to the question.

SOFTWARE

An answer is then constructed and, finally, morphing technology is used to make the virtual Einstein's mouth move as though the man himself were speaking.

The system works so quickly that users can have a natural conversation.

A projector that does not require viewers to wear special glasses to obtain a three-dimensional effect has also been developed for the virtual Einstein. It may allow large audiences to chat with characters.

Stevens claims that musicians should be able to use the system to create interactive music CDs that also let you talk to the band.

"We are even talking to one national archive about recreating a former American president on the system," says Stevens, who has already made several virtual sportsmen with the technology. "Any person who has left a large archive about themselves could be recreated," he says.

If the system does not know the answer to the question, it can ask users for more information, or choose from a selection of jokes stored on video.

A version of the technology linked to an Internet search engine exists, but Stevens says his project goes far beyond this. "What we are doing is creating a personality, someone you can chat to. To do that, we need to know exactly how a person will respond to a question - general responses would take away from the intimacy of the system."

The software has already been tested with schoolchildren, who were able to chat with Einstein about his work and personal life.

At present most of the information for the database has to be inputted by hand. It took seven months to create the virtual Einstein.

"Our goal is a fully automated system," says Stevens. "You could just give it a collection of home movies featuring yourself, and some details about your life. The system should then he able to go off and create a synthetic interview for you."

He hopes such an automated consumer system will be available within three years.

The software has been designed to run on standard PCs. However, if the background information was as extensive as that held on the Einstein database, about five CD-Roms would be needed.

Stevens believes that once the high capacity DVD-Rom format is launched later this year, it will become practicable to put your personality on disk.

He is also investigating the possibility of placing the software on a Web site. "We already have a text version of the system running over the Internet, and once we have higher-speed connections, there is no reason why we could access the full-motion video via the Net," says Stevens.

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