You’ve got it taped
Measure it and it’s there... in 3D on your computer

Imagine if you could measure up a room with a tape measure and have your computer instantly convert the rough figures into a three-dimensional graphic of the room. What you need is HandScape, the first tape measure in the world that can work out where it is in 3D space. HandScape is the brainchild of computer scientists at MIT's Media Laboratory.

The team says people using the tape measure will be able to work out the best use of storage space available in, say, a garage or attic. The device could also be used professionally by shipping companies and architects, says Jay Lee, the graduate student who developed the tape measure at MIT. It could even be used by archaeologists to log where objects are found on a dig.

“The tape measure is a very common tool that everyone uses,” says Lee, who demonstrated his creation at the annual SIGGRAPH computer graphics conference in Los Angeles last week.

The versatile device looks like a standard tape measure, but it also works out the orientation of each measurement using a compass and accelerometer tacked away inside the housing. The length of each side of the tape is digitally recorded by measuring how much tape is pulled out from the handheld unit. The compass measures the direction the device is facing, while the accelerometer determines how much the unit is tilted in relation to the horizontal plane.

A radio transmitter beamed the instrument readings to a nearby laptop computer, where MIT’s software translates the figures into 3D pictures. In addition, ignoring the volume of each box you might want to store in the attic, for example, the software can determine how best to fit the boxes into the limited space available.

One drawback, says Lee, is that the device can only measure straight lines, whereas people often want to measure curves. But a Canadian company has already come up with a solution: a flexible tape measure that transmits the shape of a curved surface to a computer. By combining the two technologies, it might finally be possible to hide that odd-shaped lamp out of sight for good.

Catherine Zandonella, Los Angeles

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