

AIST group measures objects in 3-D with camera, projector (w/ Video)

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(Phys.org) -- Got camera? Got projector? Then you can measure objects in 3-D. A group at the Advanced Industrial Science and Technology Institute (AIST) has had no problem doing that. The researchers have demonstrated their method for measuring objects in 3-D, using only a camera and projector. Patterned light is projected on to the object and pattern images captured by the camera are processed to measure its 3-D shape.

The team says the value of their method is that it can provide more measurement positions than conventional [motion capture](#), and can be used in scenarios where shapes have been difficult to measure because they change too fast. They also say that their method is precise, with a tolerance of just 1-2 mm.

Ryusuku Sagawa, service Robotics Research Group, Intelligent Systems Research Institute at AIST, presided over the [camera](#) and [projector](#) demo. "If you look carefully, you can see that each line is wavy. The wavy line patterns are carefully designed, so the pattern from the projector can be recognized from the camera image. This makes it possible to use the projector and the camera for triangulation, so we can know the [shape](#) at that instant."

Sagawa foresees such a system as having use in research about using the body to control things like multimedia, [virtual reality](#), and games. He also said that data obtained by this [measurement method](#) could be used to analyze how athletes move." He can imagine the system being used to measure the movements of an athlete in the middle of a stadium, from a long way away, for example. If we can do that, we think this method would be great for making 3-D videos as well."

Actually, the possibilities may go beyond what they have already considered. "Currently, we've stopped at the stage of making measurements. But we're also thinking about how to use the measured data. We'd like to work on applications to sports science and materials analysis." Another possibility, as long as the patterns can be captured, is to apply the system to work with different devices, too. "We'd also like to keep increasing the range of things that can be measured."

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