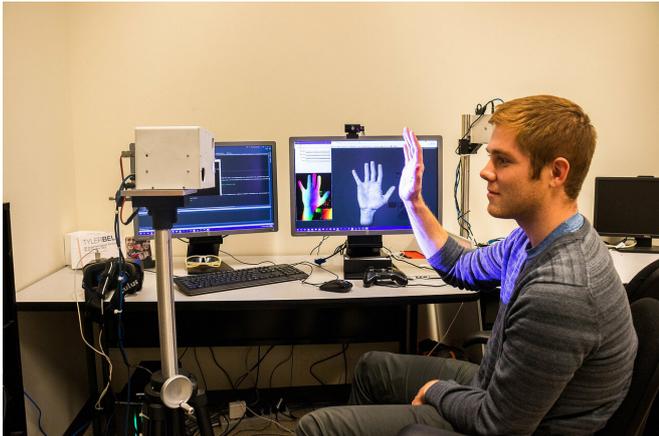# A new pipeline for 3-D video recording, compression, transmission and decompression

15 February 2019

Holostream, a platform created by Purdue's Song Zhang, uses a new pipeline for 3D video recording, compression, transmission, decompression and visualization. Credit: Purdue University

You might have a music video – and a Purdue University professor – to thank for making a future trip to see the doctor much easier.

Song Zhang, an associate professor of mechanical engineering in Purdue's College of Engineering, was working on a music video and knew there had to be an easier way to share 3D content.

"It was a real struggle back then to compress and send the 3D video to the band," Zhang said. "Now, we have come up with a platform that enables high-quality 3D video communication on mobile devices through standard wireless networks."

The platform, called Holostream, drastically reduces the data size of 3D video without substantially sacrificing data quality. The technology allows transmission within the bandwidths provided by existing wireless networks.

"This kind of technology can be used for teleconferencing, manufacturing and many other applications," Zhang said. "We are headed toward allowing a patient and doctor to interact over a mobile device, where the doctor would see a 3D version of the patient."

Holostream uses a new pipeline for 3D video recording, compression, transmission, decompression and visualization.

The team developed both the hardware and software for the pipeline including a 3D video capture system. A 3D camera captures the images, using an LED light to project structured patterns of stripes onto the object being scanned. These stripes allow the system to determine the depth and shape of the object.

Zhang said his team is also exploring the uses of the technology for the teleoperation of robots. A user would be able to see in 3D real time the perspective of the robot.

Provided by Purdue University

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