

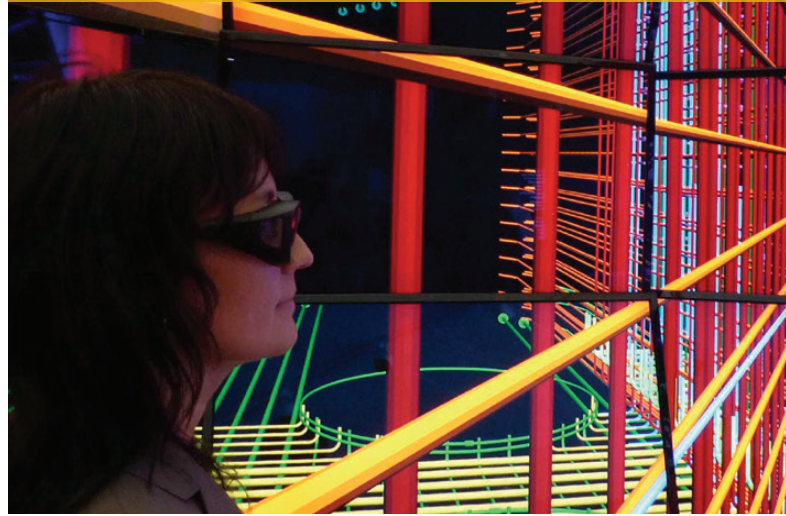
Groundbreaking 3D Panoramic Imaging System

For efficiently generating extraordinarily realistic, visually stunning 3D images

A disruptive new technology from KAUST enables fast, low-cost production of three-dimensional (3D) panoramic images with unprecedented levels of image clarity and precision. Although 3D technology is rapidly advancing, its progress is still hindered by the lack of superior technologies for obtaining 3D images. KAUST's breakthrough imaging system fills that gap.

This extraordinary system enables users to immerse themselves in the most realistic and visually stunning virtual 3D environments currently available. In addition, the technology captures and converts 3D stereo images faster and more cost effectively than any competitor in the market. The exceptional quality of the visualization technology opens up new market opportunities in areas such as virtual tourism, museum exhibits, real estate, and much more.

TECHNOLOGY OPPORTUNITY



Benefits

- ▲ **Fast production time:** Captures stereoscopic panoramic images in 1 second and requires no post-process stitching, significantly reducing production time
- ▲ **Reduced labor costs:** Enables an image capture service to charge less for content delivery, due to the reduced labor associated with the significant reduction in time to capture and process images
- ▲ **Lowered equipment costs:** Uses less expensive equipment (\$100–\$1,000) than light detection and ranging (lidar) scanning equipment (\$10,000–\$100,000)
- ▲ **Robust:** Can access hazardous or difficult-to-reach locations through a remotely driven robotic platform

Applications

- ▲ Museums, aquariums, or planetariums for 3D immersive, experiential learning
- ▲ Travel agencies to showcase travel destinations
- ▲ Real estate to showcase large plots of land
- ▲ Amusement parks
- ▲ Architectural and civil engineering design
- ▲ Product design
- ▲ Training facilities for medical, military, and maintenance applications
- ▲ Entertainment (e.g., video games, movies)

Opportunity

This technology is part of KAUST's technology commercialization program that seeks to stimulate development and commercial use of KAUST-developed technologies.

Opportunities exist for joint development, patent licensing, or other mutually beneficial relationships.

For More Information

ip@kaust.edu.sa

innovation.kaust.edu.sa

Technology Details

KAUST's 3D stereoscopic panoramic image system produces high-quality 3D panoramic images quickly and inexpensively. The technology is ideal for organizations that have 3D immersive environments (known as CAVEs) that allow users to be fully surrounded by the images projected on the walls of a room and to navigate and interact with the images. The system can also be used for training (e.g., medical, military), entertainment (e.g., video games, movies), experiential learning, and architectural design.

How It Works

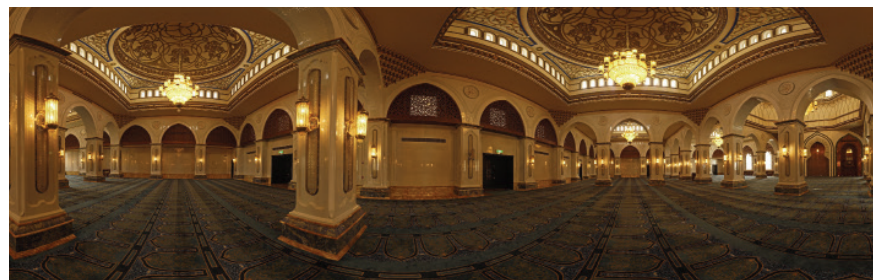
The technology consists of four main elements: a stereoscopic image-capture device, programmable camera controller, robotic maneuvering platform, and path and adaptation controller. The first three elements use commercially available equipment. The novelty of the invention lies in the fourth element—the algorithm for the path and adaptation controller—which enables quick image capture and stereoscopic panorama production without the need for post-process stitching software.

Why It Is Better

This technology enables companies to obtain extraordinary 3D images that can be used in 3D filming, CAVEs, and many other experiential immersive environments. Current methods for creating 3D panoramic models, including lidar scanning and computer-aided design (CAD), typically require up to 45 minutes per photographic panorama capture and over 15 hours for post-process stitching. In contrast, KAUST's system captures an image in 1 second and requires no post-process stitching. This in turn lowers production costs and operational expenses for users. In addition, competing technologies cannot provide the sharp, detailed panoramic images available through KAUST's imaging system. The superior quality of the images and the unprecedented capture and production speed enables a wide array of new industries to take advantage of this technology.

IP Protection

KAUST has several patents pending for this technology.



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