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Pipeline of Activity

University of Dayton

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NEWS

Thursday February 18, 2016

Pipeline of Activity

One of the nation's largest utilities is supporting the work of the University of Dayton Vision Lab to monitor more than 2 million miles of pipelines that affect virtually every community in the U.S.

California-based Pacific Gas & Electric has given the Vision Lab \$254,362 to help researchers continue to develop an automated monitoring system for change detection in buildings on pipeline corridors. The new system will automatically detect changes near pipeline right of ways because of construction and relay information to pipeline operators and first responders.

"Construction, especially additions to buildings, often encroaches on pipeline right of ways, adding additional weight and stress to the land surrounding the pipeline," said Vijayan Asari, Ohio Research Scholar in Wide-Area Surveillance at the University of Dayton and director of the Vision Lab.

From heights of 1,000 to 3,000 feet, the software can enhance image clarity by 25 times and eliminate shadows, fog, haze, smoke, rain and other atmospheric noise to better reveal the threats.

The software also can automatically detect intrusions to the pipeline right of ways such as large vehicles or construction equipment.

The system will be able to process and transmit images in virtual real time plus report the threat location on a Google map.

Asari and Vision Lab researchers have been working on pipeline safety since the lab opened in 2010.

The Pipeline Research Council also has contributed almost a half-million dollars to the lab, providing

opportunities for up to 10 full-time researchers and 15 students at a time to assist with the pipeline safety project. That research focused on detecting threats on pipeline right-of-ways caused by machinery.

"The project with the Pipeline Research Council International is in its final stage. A vendor is testing our software and the results look very promising," Asari said. "We are in the process of finding appropriate customers for commercialization of the product."

Vision Lab researchers also perform research in the areas of brain analysis, vision-guided autonomous robotic navigation and tracking, and facial behavior recognition. The lab is home to RAIDER, a robot with facial recognition capabilities. The Vision Lab and the U.S. Army Medical Research and Materiel Command's Telemedicine & Advanced Technology Research Center hope one day RAIDER can be dropped into dangerous areas to rescue injured persons.

For more information on the Vision Lab and to see image analysis projects, visit the related link.

For more information, contact Shawn Robinson, associate director of media relations, at 937-229-3391 or srobinson@udayton.edu.

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