



TiVo Announces Pioneering Research Partnership with University of Waterloo

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The unique project under the stewardship of renowned professor Dr. Zhou Wang will further the University's research in advanced video technologies while enhancing TiVo's world-class patent portfolio

SAN JOSE, Calif.--(BUSINESS WIRE)-- TiVo (NASDAQ: TIVO), the company that brings entertainment together, today announces an innovative partnership with the University of Waterloo that will begin with a project investigating methods to enhance the user quality-of-experience for 360° omnidirectional video on head-mounted devices.

The research will be led by the University of Waterloo's Professor Zhou Wang, whose research includes signal and image processing, computational vision and pattern analysis, multimedia coding and communications, and biomedical signal and image processing. The first phase of the partnership will be a project targeting the development of perceptual quality-of-experience assessment methods, with the further aim of developing perceptual encoding and streaming methods to improve performance, resulting in contributions to the practical use and standardization of 360° omnidirectional videos used in, among other applications, immersive content experiences. This creative project will enable the University to further the impressive research done by Dr. Wang while adding innovation to TiVo's world-class patent portfolio.

"We are honored to be working with the University of Waterloo. Dr. Wang is a celebrated academic and the opportunity to embark on this research presents a unique way for TiVo to innovate on the innovation process itself," said Arvin Patel, CIPO, TiVo. "We have been looking at ways to widen our portfolio and find new initiatives that allow TiVo to both contribute to the discovery of new technology and expand its pipeline of inbound invention."

"Streaming 360° omnidirectional video to head-mounted devices for the best viewer experience is extremely challenging, not only due to the excessive data throughput requirement to enable high resolution and high frame rate visual presentation, but also because of our limited understanding on how to best assess and enhance the quality-of-experience of end users," said Zhou Wang, professor, electrical and computer engineering, University of Waterloo. "We appreciate TiVo's support for this project, which allows us to explore this exciting research direction and opens the opportunity to make an impact in the real world."

"This partnership with the University of Waterloo shows that innovation can be demonstrated across all of TiVo, not just in the products and services we offer to customers. The project we are embarking upon is unique in its goals and will allow us to improve upon the technology that future TiVo products may take advantage of," said Dave Shull, president and CEO, TiVo. "The work we are embarking on with Dr. Wang is very exciting, and through this we have the opportunity to make a contribution to the future through TiVo-owned innovations."

About TiVo

TiVo (NASDAQ: TIVO) brings entertainment together, making it easy to find, watch and enjoy. We serve up the best movies, shows and videos from across live TV, on-demand, streaming services and countless apps, helping people to watch on their terms. For studios, networks and advertisers, TiVo delivers a passionate group of watchers to increase viewership and engagement across all screens. Go to tivo.com and enjoy watching.

Caution Concerning Forward-Looking Statements

This press release contains forward-looking statements. Readers are cautioned that such forward-looking statements involve risks and uncertainties that could cause actual events or our actual results to differ materially from those expressed in any such forward-looking statements. Readers are directed to TiVo's periodic and other reports filed with the Securities and Exchange Commission (SEC) for a description of such risks and uncertainties. TiVo undertakes no obligation to update any forward-looking statements.

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