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Two Mitsubishi Electric Researchers Elevated to IEEE Fellows, Class of 2026

Recognized for contributions to technological innovation and societal progress

(From left) Dr. Toru Takahashi and Dr. Michael J. Jones

TOKYO, March 12, 2026 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that Dr. Toru Takahashi of Mitsubishi Electric's Information Technology R&D Center in Kamakura, Japan and Dr. Michael J. Jones of Mitsubishi Electric Research Laboratories, Inc. in Cambridge, MA, USA have been elevated to the grade of IEEE Fellow in the class of 2026. IEEE, the world's largest association of some 486,000 professionals engaged in electrical/electronic engineering and information/communication technology in 190 countries, confers fellowships annually on less than 0.1% of its voting members for outstanding contributions to technological innovation and societal progress.

Dr. Toru Takahashi: for leadership in development of phased arrays for satellite communication and radar systems

Dr. Takahashi has developed innovative calibration[1] and dual-polarization[2] technologies for phased-array antennas[3] used in satellite communications and radar. His calibration methods enable a phased array to operate as a single antenna by precisely synchronizing all array elements. By reducing calibration time,

[1] A technology that estimates and corrects errors in each high-frequency component that constitutes an antenna.
[2] A technology that enables simultaneous transmission and/or reception of radio waves with mutually orthogonal polarizations.
[3] An antenna system that electronically controls the signals of multiple antenna elements to instantaneously steer the direction of radio waves.

improving accuracy, and theoretically analyzing error sources, these methods have greatly advanced phased-array performance as well as contributed to bringing antenna systems into practical use. His novel dual-polarization technique, called "feed-point perturbation"[4] has been applied to the phased arrays on the Advanced Land Observing Satellite-2 "DAICHI-2" (ALOS-2) and the Advanced Land Observing Satellite-4 "DAICHI-4" (ALOS-4) satellites, both of which observe the Earth's surface using onboard phased array type L-band synthetic aperture radar. Together, these technologies are expanding satellite communications capacity and enabling more versatile radar observations, thereby contributing to a safer world.

Dr. Michael J. Jones: for contributions to computer vision and object detection

Dr. Jones developed the world's first real-time face-detection system[5] to run on a general-purpose CPU, and through pioneering research on video-based anomaly detection he has made significant contributions to the advancement and practical application of visual recognition technologies. In 2001, the face-detection method he co-published with Dr. Paul Viola while at Mitsubishi Electric Research Laboratories became widely known as the Viola-Jones face detector. It demonstrated the power of the boosting algorithm for machine-learning applications in the computer-vision community. This work also introduced integral-image[6] representation, which makes the computation of certain simple image features extremely efficient. Finally, his work demonstrated the effectiveness of a cascade of increasingly complex classifiers to create a fast, accurate object detector in images. His algorithms for video-based anomaly detection have widespread applications in surveillance, security, factory automation, and video indexing.

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About Mitsubishi Electric Corporation

With more than 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 5,521.7 billion yen (U.S.$ 36.8 billion*) in the fiscal year ended March 31, 2025. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥150=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2025

[4] Proprietary technology developed by Mitsubishi Electric that improves dual-polarization performance by introducing minute structural modifications at the antenna feed point.

[5] Presented by Drs. Viola and Jones at IEEE Conference on Computer Vision and Pattern Recognition (CVPR) in December 2001 (according to Mitsubishi Electric's research).

[6] Data representation used in image processing to quickly compute the sum of pixel values within any rectangular region.