The 2016 VGTC Virtual Reality Career Award

Thomas A. Furness III

The 2016 Virtual Reality Career Award goes to Thomas A. Furness III of the University of Washington, Seattle, WA, for his lifetime contributions in pioneering the development of virtual reality and augmented reality technology and applications. Through his various roles as an Air Force Officer, Civil Service Scientist, Professor and Entrepreneur Tom developed the first operationally viable virtual interface technologies for the US military, founded a family of Human Interface Technology Laboratories in Seattle, New Zealand and Australia, contributed to 100 inventions and spun off 27 companies related to VR technology and applications with an aggregate market capitalization of > $7B. He has testified before the U.S. Senate regarding the future of virtual reality and its impact on the national information infrastructure. Among his contributions Tom developed the Visually-Coupled Airborne Systems Simulator, the Super Cockpit (a virtual cockpit the pilot wears), invented the Virtual Vision Sport (the first consumer personal virtual display), and the laser-projected Virtual Retinal Display. He orchestrated the first transpacific collaborative virtual reality (Greenspace) and spearheaded the first uses of VR in pain management, education, surgical simulation. He is the founder of the non-profit Virtual World Society for extending virtual reality as a learning system for families. The IEEE VGTC is pleased to award Thomas Furness the 2016 Virtual Reality Career Award.

Thomas A. Furness III
University of Washington,
Seattle, WA, USA
Award Recipient 2016

Tom Furness was born on April 19, 1943 and grew up in Enka, a small village in Appalachian Mountains on the outskirts of Asheville, NC. He graduated from Enka High School in 1961 and earned the BS degree in Electrical Engineering from Duke University and a commission in the United States Air Force in 1966. While at Duke he was the president of the student chapter of the newly formed IEEE. In 1981 Tom earned the Ph.D. in Engineering and Applied Science from the University of Southampton, England.

After graduation from Duke, Tom served for five years on active duty as an Air Force officer at the Armstrong Laboratory at Wright-Patterson Air Force Base, Ohio. During this time he conducted early work on helmet-mounted tracking and virtual display systems, and the flight testing of these systems in fighter aircraft. Leaving active military service, he continued at Wright-Patterson for another 18 years as a Civil Service Scientist where he developed advanced cockpits and virtual interfaces for the Department of Defense. He is the author of the Super Cockpit program and served as the Chief of Visual Display Systems and Super Cockpit Director until he joined the University of Washington as a tenured professor in 1989.

At UW Tom founded the Human Interface Technology Laboratory (HITLab) that continued pioneering virtual reality hardware and software technology along with VR applications in medicine, education and training. The HITLab was supported in part by the Virtual Worlds Consortium consisting of 50 international companies. In 1993 Tom served as the first General Chairman of the IEEE VRAIS Symposium, the forerunner of the IEEE VR Conference. In 2002 at the invitation of the New Zealand government, Tom founded the HIT Lab New Zealand at University of Canterbury, Christchurch, New Zealand and in 2006, the HIT Lab Australia at the University of Tasmania, Launceston, Tasmania.

While at the HIT Lab at the University of Washington Tom invented the personal eyewear display that led to the start up of Virtual Vision Inc., manufacturing the first consumer virtual display. In 1992 he invented the revolutionary virtual retinal display that scans a photon stream directly onto the retina of the eye using micro lasers. The VRD was followed by the invention of the interactive virtual retinal display that added a hybrid head and eye tracking system to the virtual retinal display. Both systems were licensed by Microvision Inc. In 1998 Tom received the Discover Award for his invention of the virtual retinal display.

With his Ph.D. student Mark Billinghurst, Tom started ARToolworks Inc. in 2002 to develop and market the ARToolkit, the first commercial video-based augmented reality system. More recently he has continued an active role in virtual and augmented reality development and application. August 2014 he presented a keynote address: 'Seeing Anew' at the IEEE International Symposium on Mixed and Augmented Reality in Munich, Germany and a keynote titled 'Being the Future' at the Augmented World Expo June 2015 in Santa Clara, California, where he received the first lifetime achievement award for his 50 year contribution to the VR and AR Industries.

In addition to his academic appointments, Tom runs his own 'skunkworks' company: RATLab LLC (RAT = rockin' and thinkin') where he and his colleagues develop advanced technologies for spinoff companies. His current projects deal with developing pulse diagnosis as an early warning system for cardiovascular disease and advanced VR concepts.

Award Information

The IEEE VGTC Virtual Reality Career Award was established in 2005. It is given every year to an individual to honor that person's lifetime contributions to virtual & augmented reality. VGTC members may nominate individuals for the Virtual Reality Career Award by contacting the awards chair, Arie Kaufman, at vgtc-vr-awards@vgtc.org.

For more information, please visit http://www.hitl.washington.edu/people/tfurness/.