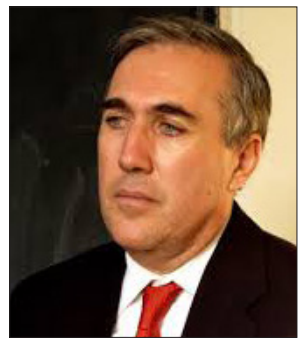
The 2017 VGTC Virtual Reality Career Award

Grigore Burdea

The 2017 Virtual Reality Career Award goes to Grigore Burdea, Rutgers – The State University of NJ, for his lifetime contributions to research and practice in haptic feedback, tele-rehabilitation and integrative virtual rehabilitation.

Since the late 1980s, Burdea has made pioneering contributions to wearable haptics (he invented the Rutgers Master glove) and later the Rutgers Ankle. Both used low-friction pneumatic actuators to reduce weight and increase safety. Burdea was also the first to demonstrate a hand tele-rehabilitation setting between Rutgers (New Jersey) and Stanford (California) for which he was cited by President Clinton. In 2002, together with Professor Daniel Thalmann, Burdea started the conference series on Virtual Rehabilitation. Later he became CEO of the International Society on Virtual Rehabilitation which Burdea founded in 2008. The IEEE VGTC is pleased to award Grigore Burdea the 2017 Virtual Reality Career Award.



Grigore Burdea
Rutgers-The State University of New Jersey
Award Recipient 2017

Burdea is Professor of Electrical and Computer Engineering and Adjunct Professor of Biomedical Engineering at Rutgers - the State University of New Jersey. Burdea was born in 1955 in Bucharest, Romania, where he received his B. Eng. degree as Valedictorian in 1980. Burdea was then offered a Fellowship at NYU where he graduated with a PhD degree in Applied Science – Robotics, under the advising of the famous Professors Martin Hoffert and Jacob Schwartz.

In 1988 Burdea joined Rutgers ECE Department, where he formed the Human-Machine Interface Laboratory and later the Tele-Rehabilitation Institute. It is in this research environment that Burdea invented the Rutgers Master glove as an interface allowing users to feel the compliance of virtual objects. The journal Presence (MIT Press) featured it in its 1992 Inaugural Issue. The Rutgers Master was subsequently used to rehabilitate patients post carpal tunnel surgery playing Rutgers custom VR games at Stanford University. This marked the start of a new science domain which Burdea coined "tele-rehabilitation" in 1990. This earned a Presidential citation as example of leading-edge, human-centered, federally funded research.

In early 2000 Burdea's team was asked to join forces with Meredith Golomb MD, a pediatric neurosurgeon at Indiana University. A low-cost home rehabilitation system was created using Virtual Reality running on modified PlayStations, coupled with the 5DT DataGloves. This clinician-engineers team was able to give back hand function to teenagers with Cerebral Palsy living in rural Indiana, and training at home. It was the first time Virtual Reality proved a viable treatment where conventional medicine was unsuccessful.

Burdea was also preoccupied by the inefficiencies of conventional therapy for stroke, TBI or dementia. Current rehabilitation targets the motor, or the cognitive, or the emotive, but not the patient as a whole. Using Integrative Virtual Rehabilitation (a term he coined), Burdea was able to reverse mild cognitive impairments back to normal cognition in only 8 weeks of playing his custom serious games. Burdea was also able to improve a rare case of Primary Progressive Aphasia, which conventional Medicine considers incurable.

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.ece.rutgers.edu/faculty/burdea.

The 2017 VGTC Virtual Reality Technical Achievement Award

Michael Zyda

The 2017 Virtual Reality Technical Achievement Award goes to Michael Zyda, University of Southern California Department of Computer Science, for fundamental work in virtual reality networking, body tracking & institutionalizing the application of virtual reality. The IEEE VGTC is pleased to award Michael Zyda the 2017 Virtual Reality Technical Achievement Award.

Michael Zyda
University of Southern California
Award Recipient 2017

Michael Zyda is the Founding Director of the USC GamePipe Laboratory, and a Professor of Engineering Practice in the USC Department of Computer Science. At USC, he founded the B.S. in Computer Science (Games), the M.S. in Computer Science (Game Development), and the USC Games joint Advanced Games course and took that program from no program to the #1 Games program in the world. That program has been rated #1 by the Princeton Review for six straight years. His alums have shipped games played by over 2.5 billion players, about $100B in revenue.

From Fall 2000 to Fall 2004, he was the Founding Director of the MOVES (modeling, virtual environments, and simulation) Institute located at the Naval Postgraduate School, Monterey, and a Professor in the Department of Computer Science at NPS as well. At NPS, Zyda's NPSNET Research Group built the first networked virtual environment with fully instrumented body suits that played across the Internet. His work on the networking of virtual environments contributed to the development of the IEEE 1278.1 standard for distributed interactive simulation. He helped found the subspecialty in modeling and simulation for the United States Navy, the simulation operations functional area (57) for the US Army and the simulation operations area (MOS-9625) for the US Marine Corps. While at NPS, Zyda was Associate Editor and then Senior Editor for the MIT Press Journal Presence: Teleoperators and Virtual Environments from 1993 - 2004. With Fred Brooks and Henry Fuchs, he co-founded the ACM SIGGRAPH Symposium on Interactive 3D Graphics in 1990.

He was a member of the National Research Council Committee that put out the report "Virtual Reality - Scientific and Technological Challenges". He chaired the NRC Committee that put out the study "Modeling and Simulation - Linking Entertainment and Defense". That NRC report changed the entire Department of Defense towards the usage of games and entertainment technology for its future modeling and simulation systems. From that report, Zyda wrote the operating plan and research agenda that founded USC's Institute for Creative Technologies.

For the National Research Council, he has served on committees for the Behavioral and Social Sciences and Education Commission, the Computer Science and Telecommunications Board, the Aeronautics and Space Engineering Board, the Mathematical Sciences and Their Applications Board, the Naval Studies Board, the Air Force Studies Board, the Army Research Laboratory Technical Assessment Board, the Board on Higher Education and Workforce, the Board on Behavioral, Cognitive, and Sensory Sciences, and the Board on Earth Sciences and Resources.

Zyda holds a lifetime appointment as a National Associate of the National Academies, an appointment made by the Council of the National Academy of Sciences in November 2003, awarded in recognition of "extraordinary service" to the National Academies.

Zyda is a member of the Academy of Interactive Arts & Sciences. He served as the principal investigator and development director of the America's Army PC game funded by the Assistant Secretary of the Army for Manpower and Reserve Affairs. He took America's Army from conception to three million plus registered players and hence, transformed Army recruiting. The creation of the America's Army game founded the serious games field. He co-holds two patents that form the basis for the nine-axis sensor in the Nintendo Wii U. He is known as the "Indiana Jones of virtual reality" and the "Raymond Chandler of technical computer science."

Award Information

The IEEE VGTC Virtual Reality Technical Achievement Award was established in 2005. It is given every year to recognize an individual for a seminal technical achievement in virtual and augmented reality. VGTC members may nominate individuals for the Virtual Reality Technical Achievement Award by contacting the awards chair, Arie Kaufman, at vgtc-vr-awards@vgtc.org.

For more information, please visit http://gamepipe.usc.edu/~zyda/.