The 2007 Visualization Technical Achievement Award

Jarke J. van Wijk

This 2007 Visualization Technical Achievement Award goes to Jarke J. van Wijk, Eindhoven University of Technology, in recognition of seminal achievements in Flow Visualization.

Jarke became interested in flow visualization in the late eighties. One challenge here is to find suitable metaphors. He was inspired by the clear patterns shown by real world flow and started to explore if moving textures, aligned by the flow, could be generated automatically. In 1991 he presented the Spot Noise technique for this. Other results in flow visualization were the use of oriented particles (with Johan Stolk), implicitly defined stream surfaces, a probe for flow patterns (with Wim de Leeuw), and clustering of flow fields (with Alex Telea). In 2002 he introduced IBFV, Image Based Flow Visualization, a surprisingly simple technique that can be used to generate moving textures, particles, streamlines, and topological decompositions for 2D flow fields at real-time speed using commodity graphics hardware. Later he showed how this technique could also be used to visualize flow on 2D surfaces embedded in 3D. The IEEE VGTC is pleased to award Jarke J. van Wijk the 2007 Visualization Technical Achievement Award.

Jarke J. van Wijk
Eindhoven University of Technology
Award Recipient 2007

Biography

Jarke J. van Wijk is a full professor of Visualization at the Eindhoven University of Technology, the Netherlands. He received a MS with honors in Industrial Design Engineering in 1982 from Delft University of Technology. His final project was about computer simulation of crash victims. As part of this, he developed a system to visualize the results of 3D simulations. As a result, he became fascinated by the combination of challenging puzzles and visual results offered by computer graphicsand in particular visualization. His PhD project concerned ray tracing and geometric modeling. He continued at Delft University of Technology to obtain his PhD with honors in Computer Science in 1986. After a brief period working in the software industry, Jarke started at the Netherlands Energy Research Foundation (ECN) as a staff member in 1988. He contributed there to the development of custom graphical interfaces for a variety of applications, varying from energy research, molecular dynamics, finite element simulations, to environmental simulation, and did research on scientific visualization. In 1998 Jarke was appointed to a position at the Technische Universiteit Eindhoven, becoming a full professor in 2001.

At ECN, besides flow visualization, he has studied computational steering (with Robert van Liere and Jurriaan Mulder). Since 1998 his main focus is information visualization. He has worked on tree visualization, graph visualization, and software visualization, together with coworkers and students, including Frank van Ham, Danny Holten, Jing Li, Hannes Pretorius, Yedendra Shrinivasan, Alex Telea, Roel Vliegen, Lucian Voinea, and Huub van de Wetering. Finding new visual metaphors, using techniques from computer graphics and geometric modeling, is a leading theme in his work. A typical result was the Cushion Treemap technique, used in SequoiaView, a tool for the visualization of the contents of a hard disk. This in turn led to MagnaView, a spin-off company focusing on the visualization of business data. Recently, he became interested in visual analytics and mathematical visualization.

Jarke co-authored more than 100 scientific publications in visualization and computer graphics, which appeared in a variety of journals and conferences, including IEEE Visualization, *IEEE TVCG*, IEEE InfoVis, IEEE CG&A, Eurographics, CACM, ACM SIGGRAPH, ACM TOG, ACM CHI, and ACM TAP. He obtained the best research paper award at IEEE InfoVis 2003 and at IEEE Visualization 2005. He has served as a member of program committees and as a reviewer for most of the conferences and journals in the field. He acted as paper cochair for IEEE Visualization in 2003 and 2004, and IEEE InfoVis in 2006 and 2007. He is currently a member of the steering committee of the IEEE InfoVis conference.

Award Information

The IEEE VGTC Visualization Technical Achievement Award was established in 2004. It is given every year to recognize an individual for a seminal technical achievement in visualization. VGTC members may nominate individuals for the Visualization Technical Achievement Award by contacting the awards chair, Bill Lorensen, at http://tab.computer.org/vgtc/.