Computer Graphics Achievement Award

Greg Turk

ACM SIGGRAPH recognizes Greg Turk with the 2012 Computer Graphics Achievement Award for his contributions to physically-inspired mathematical application in graphics, particularly his work on texture synthesis, geometric modeling, and physical simulation involving thin structures.

Greg's Ph.D. thesis work on textures generated by reaction-diffusion equations, a notion originally proposed by Alan Turing, showed how to generate realistic-looking patterns like leopard spots or zebra stripes. Furthermore, in studying these "in situ" rather than via a parameterization, he developed a physically-inspired sample-selection scheme for surfaces, in which adjacent samples repelled one another, leading to a sampling pattern with roughly equal inter-sample distances. This early work on reaction-diffusion evolved into other texture research throughout his career: texture synthesis by example, stitching textures using graph cuts, geometric textures, texture transfer from one shape to another, and even the formation of patterns of vegetation in wetlands.

He has also done extensive work on meshes, from image-guided simplification, in which the metric for simplifying a polyhedral object was view-dependent, to automatic remeshing techniques to improve mesh characteristics needed for faithful simulation and other computations, to "zippered meshes", in which multiple geometric scans of an object are joined into a single continuous whole, most notably the "Stanford bunny," a mesh that has served as a test-case in hundreds of SIGGRAPH papers.

In recent years, Greg has worked on techniques for the simulation of physical materials, including the representation of thin features, and on surface-tension effects, such as the crown-splash produced by a droplet falling into a bowl of water. Techniques like anisotropic kernel representations of fluids have vastly improved the appearance of the results of these simulations, while a careful understanding of physical phenomena have helped motivate techniques in which thin features exhibit appropriate behaviors.

Above and beyond his research, Greg has been an enormously effective advisor and mentor, not just to his own students, but to many others with whom he's come in contact. He's always willing to share advice and encouragement. His short essay on writing technical reviews, produced when he served as the SIGGRAPH 2008 papers chair, has served as a guideline for responsibility and civility in our field's reviews ever since.

We are very pleased to recognize Greg Turk with the 2012 Computer Graphics Achievement Award.

Biographical Sketch

Greg Turk received a Ph.D. in computer science in 1992 from the University of North Carolina at Chapel Hill. He was a postdoctoral researcher at Stanford University for two years, followed by two years as a research scientist at UNC Chapel Hill. He is currently holds the rank of Professor at the Georgia Institute of Technology, where he is a member of the School of Interactive Computing and the Graphics, Visualization and Usability Center. In 2008 he was the Technical Papers Chair for ACM SIGGRAPH.

Previous Award Recipients

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2010 Jessica K. Hodgins	1995 Kurt Akeley
2009 Michael Kass	1994 Kenneth E. Torrance
2008 Ken Perlin	1993 Pat Hanrahan
2007 Greg Ward	1992 Henry Fuchs
2006 Thomas W. Sederberg	1991 James T. Kajiya
2005 Jos Stam	1990 Richard Shoup
2004 Hugues Hoppe	and Alvy Ray Smith
2003 Peter Schröder	1989 John Warnock
2002 David Kirk	1988 Alan H. Barr
2001 Andrew Witkin	1987 Robert Cook
2000 David H. Salesin	1986 Turner Whitted
1999 Tony DeRose	1985 Loren Carpenter
1998 Michael F. Cohen	1984 James H. Clark
1997 Przemyslaw Prusinkiewicz	1983 James F. Blinn