

The 2009 Visualization Career Award

Hans Hagen

This 2009 Visualization Career Award goes to Hans Hagen, University of Kaiserslautern, in recognition of sustained and seminal contributions to Scientific Visualization.

Dr. Hagen has made significant scientific contributions, especially in the fields of geometric modeling and scientific visualization. Many of these contributions have influenced substantially the evolution of these research agenda in visualization and modeling. He is among the top leaders in these fields worldwide. It is particularly noteworthy that Hans Hagen established the first “International Research Training Group” (IRTG) involving his home university, UC Davis (lead US partner), University of Utah and Arizona State University. Over a period of nine years about 60 Ph.D. students will be supported to receive an integrated research training in the area of visualization and analysis of large unstructured data sets.

Inter alia, Dr. Hagen is the “spiritus rector” behind the highly successful Dagstuhl Visualization Conference series.

The IEEE VGTC is pleased to award Hans Hagen the 2009 Visualization Career Award.



Hans Hagen

University of Kaiserslautern
Award Recipient 2009

BIOGRAPHY

Dr. Hagen earned his Ph.D. degree in mathematics from the University of Dortmund, Germany. In his doctoral dissertation he solved problems in differential geometry, directly related to the mathematical foundations of general relativity. This scientific background allowed him to enter and make relevant contributions to the field of geometric modeling, a field now providing the basis for computer aided design (CAD) technology and systems. Over the past two decades his research efforts have had substantial impact in many engineering disciplines, especially in mechanical and civil engineering.

Dr. Hagen’s research contributions are as diverse as they are significant. Specifically, Dr. Hagen has substantially contributed to the development of modern approaches to “variational design”, a branch of geometric modeling concerned with a class of methods for smooth curve and surface design. These methods, many of them developed by Dr. Hagen, use the mathematical principle of minimizing energy functionals, with diverse applications in engineering. Dr. Hagen’s contributions in this area have led to the establishment of new industry standards.

Dr. Hagen has also pioneered research in vector and tensor field visualization. For example, the “stream ball concept” was originally proposed by him, making a major contribution to effective analysis of complicated vector fields. Especially over the past decade, Dr. Hagen has also established himself as one of the world’s leading scientists in topology-based visualization. This branch of scientific visualization has gained increasing significance in recent years due to the emerging need for radically different approaches for the characterization and analysis of complex, large data sets. Up to the present, Dr. Hagen has co-authored nearly 250 papers, His research efforts were supported by roughly \$18M over the past twenty years. He obtained funding from a variety of agencies, including the German Research Foundation (DFG), the European Union (EU), the German

Federal Ministry of Education and Research (BMBF), and industry.

The journal and conference papers co-authored by Dr. Hagen have appeared in premier places and are characterized by a high degree of originality, clear presentation style and mathematical rigor. He has presented his work at all leading international conferences in scientific visualization and geometric modeling and has published in all leading journals. Dr. Hagen served as Editor-in-Chief of the IEE Transactions on Visualization and Computer Graphics (TVCG) and has served as an associate editor for several major journals. These activities clearly document that Dr. Hagen is one of the most highly recognized leaders in his field, and is highly regarded by the scientific community.

Dr. Hagen is a highly talented speaker and gifted teacher. The list of Dr. Hagen’s Ph.D. advisees is extremely impressive. Many of his former Ph.D. students have gone on to become chaired and full professors at top universities within Germany, across Europe and in US. A number of his Ph.D. advisees are also serving in influential positions in the industry and in national laboratories in US and around the world. Clearly, Dr. Hagen has produced a large number of next-generation scientists who have already started making their own major contributions.

AWARD INFORMATION

The IEEE VGTC Visualization Career Award was established in 2004. It is given every year to an individual to honor that person’s lifetime contribution to visualization. VGTC members may nominate individuals for the Visualization Career Award by contacting the awards chair, Bill Lorensen, at <http://tab.computer.org/vgtc/>.