

ACM SIGGRAPH Announces 2011 Technical Award Winners

ACM SIGGRAPH will present its 2011 awards during the Keynote session on Monday, August 8, at 11:00 am in Vancouver. Technical awardees are: Jim Kajiya, Steven Anson Coons Award; Rick Szeliski, Computer Graphics Achievement Award and Olga Sorkine, Significant New Researcher. The technical awardees, along with Charles Csuri, recipient of the Award for Lifetime Achievement in Digital Art, will give their talks on Monday, August 8, 2011 at 2:00 pm.



Steven Anson Coons Award

Jim Kajiya will receive the Steven Anson Coons Award for his numerous pioneering technical contributions to rendering and computer graphics hardware design.

Kajiya started his professional graphics career in 1973 at Evans and Sutherland Computer Corporation. Jim received a doctorate in computer science from the University of Utah in 1979. For the next 15 years he was on the faculty of the California Institute of Technology where he founded the graphics research group with Al Barr. He then joined Microsoft Research (MSR) in 1994 where he built and led the graphics group and eventually went on to become a director in the MSR lab in Redmond. He now contributes at MSR in his role as a Distinguished Engineer.

In 1991 Kajiya was honored with the SIGGRAPH Technical Achievement Award. In 1997, he, along with Timothy Kay, received a technical Academy Award for work on rendering hair and fur.

Kajiya has an exceptional record of service to our field. In 1993 he served as the technical program chair for SIGGRAPH 1993. In this role he transformed the paper review process into one that has been widely emulated. As part of this effort, Kajiya authored an often read but rarely cited article entitled "How to get your SIGGRAPH Paper rejected." He has also served on the SIGGRAPH executive committee.

Kajiya is perhaps best known as the sole author of the seminal paper "The Rendering Equation" published in ACM SIGGRAPH 1986. Building on ideas published in SIGGRAPH such as the radiosity algorithm and Pixar's Distributed Ray Tracing technique, he advanced the application of radiative transfer to the problem of rendering. He recognized that various approximations to

the series solution to the resulting integral equation encompassed virtually all known rendering algorithms. But beyond this, he showed how to use Monte-Carlo Markov Chain approximations to the solution to generate pictures with a better visual fidelity than any previously produced. His path tracing algorithm remains the gold standard to which other approaches are compared. In succinct paragraphs, he also describes importance sampling and several approaches to hierarchical subdivision of the image plane for variance-reduction. For a paper with only two computer-generated images and several hand-drawn diagrams, it's had an enormous impact on the entire field.

In addition to developing foundational mathematics and associated algorithms for computer graphics, Kajiya has also been instrumental in hardware for graphics. He designed the Evans & Sutherland frame buffer, a device of significance for early raster graphics work at the University of Utah, New York Institute of Technology, JPL, and Cornell. Frame buffers are found inside every PC, tablet, and smartphone today. At Microsoft, he was also the principal architect on Talisman, advancing ideas such as texture compression and anisotropic filtering that are found in most current low-level 3D graphics standards.

Across the decades and in many areas, Kajiya has been a pioneer, leading us to a deeper understanding of everything from hardware to algorithms to languages. At the same time he has helped set in place the unique processes that have helped make SIGGRAPH what it is today.