UNCLASSIFIED

"Special" Information Science and Technology Seminar Speaker Series

Dan Keefe
University of Minnesota

Magical User Interfaces: Interactive Computing for Scientific Visualization and Art

Wednesday, August 5, 2015

1:30 - 2:30 PM

TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)

Abstract: "Beautiful or delightful in such a way as to seem removed from everyday life" – this is how the Oxford English Dictionary defines magical – I can think of no better way to describe the future of computer graphics and immersive virtual reality for science and art. What will make the future virtual environments we create so compelling is not just the visual quality, which can now equal the acuity of the human eye, but also the fact that these remarkable visual displays can be tightly coupled with user interfaces that enable us to explore and create in ways we never imagined before. In this talk, I will describe what people might do in these spaces with the aid of user interfaces that are sure to feel, well, magical. These ideas come from experiences collaborating with artists, scientists, engineers, doctors, and humanists at the University of Minnesota Interactive Visualization Lab. I look forward to presenting a number of examples from our current work, which has a special focus on applications to both scientific visualization (simulation-based engineering, medical imaging, climate science) and art (freeform 3D modeling in virtual reality), and discussing with the group how combining the highest-quality immersive visual environments with powerful new interactive techniques can open up a new world of beauty and delight for so many applications of computer science.

Biography: Dan Keefe is an Associate Professor in the Department of Computer Science and Engineering at the University of Minnesota. His research centers on scientific data visualization and interactive computer graphics. Keefe's recent awards include the National Science Foundation CAREER award; the University of Minnesota Guillermo E. Borja Award for research and scholarly accomplishments; the University of Minnesota McKnight Land-Grant Professorship; and the 3M Non-tenured Faculty Award. His research has been funded by the National Science Foundation, the National Institutes of Health, the National Academies Keck Futures Initiative, and industry. In addition to his work in computer science, Keefe has also published and exhibited work in top international venues for digital art. Before joining the University of Minnesota, Keefe did post-doctoral work at Brown University jointly with the departments of Computer Science and Ecology and Evolutionary Biology and with the Rhode Island School of Design. He received the Ph.D. in 2007 from Brown University's Department of Computer Science and the B.S. in Computer Engineering summa cum laude from Tufts University in 1999.

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