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Leveraging the arts for modeling & simulation

Since its inception, computer graphics has played a major role in several areas such as computer-aided design, game development, and computer animation. Through the use of computer graphics, we enjoy artificial realities and the ability to draw figures within a flexible electronic medium. Computer simulation in computer graphics is generally construed to be one where the simulation is used to achieve realistic behavioral effects. But what if the naturally art-based design approaches in graphics could be used to visualize and manipulate the mathematical models used as the basis of simulation? This direction suggests that graphics, and the arts, can affect how we represent complex models. I'll present approaches used in our Creative Automata Laboratory to reframe models as works of art that maintain an aesthetic appeal, and yet are highly functional, and mathematically precise.

Biography

Paul Fishwick is a Distinguished University Chair of Arts and Technology (ATEC), and Professor of Computer Science. He has six years of industry experience as a Systems Analyst working at Newport News Shipbuilding and at NASA Langley Research Center in Virginia. He was on the Faculty at the University of Florida from 1986 to 2012, and was Director of the Digital Arts and Sciences Programs. His PhD was in Computer and Information Science from the University of Pennsylvania. He is active in modeling and simulation, as well as in the bridge areas spanning art, science, and engineering. He pioneered the area of aesthetic computing, resulting in an MIT Press edited volume in 2006. He is a Fellow of the Society for Computer Simulation, served as General Chair of the Winter Simulation Conference (WSC), was a WSC Titan Speaker in 2009, and has delivered over 16 keynote addresses at international conferences. He is Chair of the Association for Computing Machinery (ACM) Special Interest Group in Simulation (SIGSIM). He has over 230 technical papers and has served on all major archival journal editorial boards related to simulation, including *ACM Transactions on Modeling and Simulation* (TOMACS) where he was a Founding Area Editor of *Modeling Methodology* in 1990. He is on the editorial board of *ACM Computing Surveys*.

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