KEYNOTE TALK
Monday, July 16, 2012
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Developing and Objectively Evaluating Crowd Simulations

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Abstract

Crowds of virtual humans are an essential part of important interactive applications such as computer games, and urban simulations. In the first part of this talk, I will discuss why steering agents in a crowd simulation is still a challenging problem, the shortcuts that computer games employ for efficiency reasons, and how modern approaches attempt to address these shortcuts in order to improve the quality and complexity of the simulation. In particular, I will describe a an approach that plans a short horizon of physics-based foot steps to steer each agent towards his or her goal. In the second part of the talk, I will describe SteerSuite a framework that encompasses our many years of research efforts towards developing and evaluating steering approaches for simulated crowds. Two unique aspects of SteerSuite are (a) its ability to automatically detect behaviors of interest during a simulation, and (b) a comprehensive approach for objectively evaluating and comparing the quality of different steering approaches.

Speaker Bio-Sketch: Petros Faloutsos is an assistant professor at the Department of Computer Science and Engineering at York University. Before joining York, he was a faculty member at the Computer Science Department at the University of California at Los Angeles, where in 2002 he founded the first computer graphics lab at UCLA, called M.A.Gix. He served as the lab's director until 2011. Faloutsos received his PhD degree (2002) and his MSc degree in Computer Science from the University of Toronto, Canada and his BEng degree in Electrical Engineering from the National Technical University of Athens, Greece. Faloutsos research interest focus on digital media, computer graphics, virtual humans, hardware accelerators for graphics, health informatics and surgical robotics. Faloutsos has received the Okawa Foundation Research Grant in 2002, and a 2001 BEST PAPER award for his paper "The Virtual Stuntman: Dynamic Characters with a Repertoire of Autonomous Motor Skills" published in Computers & Graphics by Elsevier. He has also co-authored a highly cited paper on the topology of the Internet, that received an ACM SIGCOMM Test of Time Award in 2010. Faloutsos is a member of the Editorial Board of the Journal of The Visual Computer and has served as a Program Co-Chair for the ACM SIGGRAPH/Eurographics Symposium on Computer Animation 2005, and for the Motion In Games Conference 2011. He is a member of the ACM and the Technical Chamber of Greece.