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Extended Papers from the 2009 Sketch-Based Interfaces and Modeling Conference (Foreword)

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Editorial

Foreword

Sketch-based interfaces and modeling continue to be an important research topic in computer graphics and human–computer interaction. Realizing the potential of these sketch-based systems requires effective user interface design and underlying algorithms to analyze the input for a variety of different applications such as creating and editing digital models, animation, and diagram recognition.

This special issues presents revised and extended versions of the best papers from the Sixth Eurographics/ACM Symposium on Sketch-Based Interfaces and Modeling (SBIM 2009), an annual symposium devoted to innovation and understating of sketch-based interfaces. This year's symposium was co-located with ACM SIGGRAPH, and held in New Orleans, Louisiana on August 1 and 2. The author's of the top five papers were invited to make submissions to the special issue. All papers underwent a full, independent review process. Ultimately, three papers were accepted after the journal review process.

Each accepted paper focuses on a different aspect of sketch-based interaction. The first paper, "An Evaluation of Descriptors for Large-Scale Image Retrieval from Sketched Feature Lines", focuses on fast, sketch-based image retrieval of large databases. The paper shows that existing methods do not scale well to large databases with over one million images and presents two methods that outperform them. The second paper, "The Effect of Training Condition on Classification Accuracy: Using Gesture Recognition Techniques in Free-Sketch Recognition", explores whether shapes drawn in isolation accurately reflect the way users draw shapes in a complete diagram, an important question when training free-sketch recognizers. The third paper, "A ShortStraw-Based Algorithm for Corner Finding in Sketch-Based Interfaces", focuses on the low level problem of finding corners in ink strokes. The paper extends Wolin, Eoff, and Hammond's original ShortStraw corner finding algorithm by indentifying deficiencies and making improvements as well as supporting corner detection for ink strokes containing curves and arcs.

Cindy Grimm received her undergraduate degrees from U.C. Berkeley in both Art and Computer Science in 1990. She finished her PhD at Brown in 1996 in the area of surface modeling under the direction of Dr. John Hughes. She then spent three years as a post doc at Microsoft Research working on facial animation, returning to Brown for a (short) second post doc. At Brown she looked at shape classification and worked with Dr. Laidlaw and Dr. Crisco on modeling the bones of the wrist. She joined the faculty of Washington University in St. Louis in 2000, working in the areas of art-based rendering and surface modeling. She received a CAREER award in 2003, and was promoted to associate professor with tenure in 2007. Her research interests are in perception, art-based modeling and rendering, and biomedical surface reconstruction and comparison.

Joseph J. LaViola Jr. is an assistant professor in the Department of Electrical Engineering and Computer Science and directs the Interactive Systems and User Experience Lab at the University of Central Florida. He is also an adjunct assistant research professor in the Computer Science Department at Brown University. His primary research interests include pen-based interactive computing, 3D spatial interfaces for video games, predictive motion tracking, multimodal interaction in virtual environments, and user interface evaluation. His work has appeared in journals such as ACM TOCHI, IEEE PAMI, Presence, and IEEE Computer Graphics & Applications, and he has presented research at conferences including ACM SIGGRAPH, ACM CHI, the ACM Symposium on Interactive 3D Graphics, IEEE Virtual Reality, and Eurographics Virtual Environments. He has also co-authored "3D User Interfaces: Theory and Practice," the first comprehensive book on 3D user interfaces. In 2009, he won an NSF Career Award to conduct research on mathematical sketching. Joseph received a Sc.M. in Computer Science in 2000, a Sc.M. in Applied Mathematics in 2001, and a Ph.D. in Computer Science in 2005 from Brown University.

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