Some Thoughts on Executable Visual Languages and their Interfaces

(Invited Keynote)

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Abstract—The talk will survey the highlights of work carried out in the last 30 years, regarding visual languages for the programming of reactive systems. I’ll discuss the intra-object language of statecharts and the inter-object language of live sequence charts (LSC) with its play-in interface, as well as a non-visual counterpart thereof, based on Java. Some recent work on a natural language interface for LSCs and its combination with play-in will also be shown.

Biography
David Harel has been at the Weizmann Institute of Science in Israel since 1980. He was Department Head from 1989 to 1995, and was Dean of the Faculty of Mathematics and Computer Science between 1998 and 2004. He was also co-founder of I-Logix, Inc. He received his PhD from MIT in 1978, and has spent time at IBM Yorktown Heights, and sabbaticals at Carnegie-Mellon University, Cornell University and the University of Edinburgh. In the past he worked mainly in theoretical computer science (logic, computability, automata, database theory), and he now works mainly on software and systems engineering, modeling biological systems, and the synthesis and communication of smell. He is the inventor of the language of Statecharts and co-inventor of Live Sequence Charts (LSCs), and was part of the team that designed the tools Statemate, Rhapsody, the Play-Engine and PlayGo. He devotes part of his time to expository work, including series on Israeli radio and TV, and some of his writing is intended for a broad audience (see, for example, Computers Ltd.: What They Really Can’t Do (2000, 2012), and Algorithmics: The Spirit of Computing (1987, 1992, 2003, 2012). He has received a number of awards, including the ACM Karlstrom Outstanding Educator Award (1992), the Israel Prize (2004), the ACM Software System Award (2007), the Emet Prize (2010), and four honorary doctorates. He is a Fellow of the ACM (1994), the IEEE (1995) and the AAAS (2007), a member of the Academia Europaea (2006) and the Israel Academy of Sciences (2010).