Modeling and Execution of Software User Interfaces

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Abstract: Software front-end development is a costly and inefficient process, where manual coding is the predominant development approach, reuse of design artifacts is low, and cross-platform portability remains difficult, despite some trends towards HTML-based templating. In this sense, the availability of a platform-independent modeling language for describing the user interaction can bring several benefits to the development process of user interfaces.

This speech focuses on the modeling of software UIs through graphical domain-specific languages and in particular shows the new standard adopted by OMG called IFML (Interaction Flow Modeling Language) at work. The speech illustrates the basic concepts of IFML, presents the design best practices and integration with other modelling languages, and discusses some large-scale industrial experiences (also featuring quantitative measures of productivity) achieved through IFML and associated full code generation techniques.

BRIEF BIOGRAPHY

Marco Brambilla is assistant professor at Politecnico di Milano since February 2004. He graduated cum laude in 2001 and got his Ph.D. in Information Engineering in 2004. He collaborated as application analyst in several industrial projects; among others, he worked with Acer Europe, Cisco System (San José, CA, USA), and WebRatio. He has been visiting researcher at UCSD (University of California, San Diego, prof. Papakonstantinou and Vianu), working on verification of workflow-based Web applications through linear-time temporal logics. He participated in several European and national research projects: Pharos 7FP EU Project, Cooper EU Project, ESA MyHMI Project (technical director), WebSI EU Project, MetaIC Project, W3I3 EU Project, and others. He has been PC chair of ICWE 2012 in Berlin. His research interests include theoretical, experimental, and methodological aspects related to Web modeling methodologies, Web design patterns, conceptual design of data-intensive Web applications, workflow-based Web applications, service-oriented applications, Semantic Web application modeling, MDE/MDD, Web architectures for embedded and HMI systems interfaced with home automation and industrial automation, and simplified interfaces for disabled people. He is shareholder and scientific advisor of WebRatio. He is also involved in 2 other startups related to Web and social networking technologies.