

Title: "Protocol-Based Design of Business Service Engagements"

Abstract:

"An increasing portion of our economic activities is supported via business service engagements. Designing and engineering such service engagements is challenging: not only are the participating organizations autonomous and their information systems heterogeneous, but also the underlying requirements evolve continually. Current approaches lack in two respects: (1) they employ activity-based abstractions for modeling inherently interactive engagements, and (2) they employ either program-level or data-level semantics to capture inherently business-level interactions. As a result, a basis for software reuse, refinement, and aggregation is lost. Also, a business-level understanding of the engagement is not explicit.

I propose business protocols as a modular abstraction to model the business interactions in service engagements. I also propose a business-level semantics for protocols in terms of commitments of the parties toward each other. Commitments among the parties evolve as they interact in a protocol. Also, protocols can be composed from other protocols, enabling reuse. For evaluation, the protocols approach is applied to the TWIST foreign exchange standard processes with the help of TWIST committee members. The protocol-based specifications are then compared with those found in the TWIST standards documents with respect to ambiguity and redundancy. I find that not only does protocol-based engineering of TWIST result in compact, unambiguous, and verifiable specifications, but also new foreign exchange scenarios of business significance are discovered in the process."

Bio:

"Nirmit Desai is a postdoctoral fellow in the Department of Computer Science at North Carolina State University (NCSU). His research interests include design and analysis of business service engagements, business-level SOA, large-scale distributed systems, and model-driven architecture. His papers have appeared in the leading peer-reviewed forums for software engineering, service-oriented computing, data and knowledge engineering, and multiagent systems. One of his papers was recognized as a "Best student paper" at IEEE SCC (Services Computing Conference), 2006. His professional experience includes a year of research internships at IBM TJ Watson research center. Nirmit received his PhD and MS in Computer Science from NCSU in 2007 and 2003 respectively."