Preface

Since the inception of artificial intelligence, many have argued that abstraction, reformulation, and approximation (ARA) are central to human common-sense reasoning and problem solving and to the ability of computer systems to reason effectively in complex domains.

The primary use of ARA techniques has been to overcome computational intractability by decreasing the combinatorial costs associated with searching large spaces. In addition, ARA techniques are useful for knowledge acquisition and explanation generation in complex domains.

The International Symposium on Abstraction, Reformulation and Approximation (SARA) series was established in 1994 and continued in 1995, 1998, 2000, 2002, 2005, 2007, and 2009 to provide a way for researchers to share results on ARA. The Ninth International Symposium on Abstraction, Reformulation and Approximation was held July 17–18, 2011 at a renovated medieval castle in the Parador de Cardona hotel in Cardona, Catalonia, Spain, about 60 miles northwest of Barcelona.

This year the paper submissions came from four different continents and thirteen different countries. This volume contains all twenty of the papers that were accepted by the program committee for presentation at the symposium and publication in the proceedings. In addition to the selected research papers, Stuart Russell, Smith-Zadeh Professor of Computer Science at the University of California-Berkeley, gave an invited keynote presentation at the conference.

—Michael Genesereth and Peter Z. Revesz
SARA 2011 Symposium Chairs