

Preface

This book has grown out of work spanning the last 15 years. Billy Stewart and Brigitte Plateau introduced me to stochastic automata networks (SANs) during my visit to Grenoble in June 1996. A study on robotic tape libraries using SANs was carried out in August that year with Odysseas Pentakalos and Brooke Stephens in Greenbelt, Maryland. The help received during this process from Paulo Fernandes regarding the software was instrumental. Later I had many interesting talks with Jean-Michele Fourné and Franck Quessette over SANs in Versailles and Ankara from 1998 to 2000. Nihal Pekergin was also present during these visits and brought her expertise on stochastic comparison into the picture. In June 2000, we had enjoyable discussions with Ivo Marek and Petr Mayer in Prague on the convergence properties of iterative aggregation–disaggregation. In the academic year 2002–2003, I got a chance to learn about hierarchical Markovian models (HMMs) from Peter Buchholz in Dresden. Our discussions on HMMs continued in Dortmund in June 2005 and at Dagstuhl in February 2007. It was in Dortmund and then Ankara where we investigated compositional Markovian models for symmetries with Peter Kemper in 2005. Kishor Trivedi visited Ankara in 1997; he was always available by e-mail in 2008 while we were writing a joint paper and was ready for further discussions later that year in Seattle. In early 2010 in Saarbrücken, I was convinced by Verena Wolf of the difficulties associated with analyzing systems of stochastic chemical kinetics using SANs and HMMs. This also led to stimulating exchanges with Holger Hermanns, Werner Sandmann, and David Spieler. I thank them all for providing a scholarly atmosphere in which to carry out research and for their time. I am grateful to Bilkent University for being very understanding and generous in granting these research leaves without which it would not have been possible to write this book. I am also fortunate to have worked with a number of students at Bilkent who found compositional Kronecker models for Markovian systems such as SANs and HMMs interesting and exciting: Ertuğrul Uysal, Oleg Gusak, Akın Meriç, İlker Nadi Bozkurt, and Muhsin Can Orhan. Grants available in one form or another over the years allowed me to continue working on the subject from the Turkish Scientific and Technological Research Council, the French National Scientific Research Center, the Center of Excellence in Space Data and

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