

Preface

Santosh Pande¹ and Dharma P. Agrawal²

¹ College of Computing
801 Atlantic Drive,
Georgia Institute of Technology,
Atlanta, GA 30332

² Department of ECECS, ML 0030,
PO Box 210030,
University of Cincinnati,
Cincinnati, OH 45221-0030

We are very pleased to publish this monograph on Compiler Optimizations for Scalable Distributed Memory Systems. Distributed memory systems offer a challenging model of computing and pose fascinating problems regarding compiler optimizations ranging from language design to run time systems. Thus, the research done in this area serves as foundational to many challenges from memory hierarchy optimizations to communication optimizations encountered in both stand-alone and distributed systems. It is with this motivation that we present a compendium of research done in this area in the form of this monograph.

This monograph is divided into five sections : section one deals with languages, section two deals with analysis, section three with communication optimizations, section four with code generation, and section five with run time systems. In the editorial we present a detailed summary of each of the chapters in these sections.

We would like to express our sincere thanks to many who contributed to this monograph. First we would like to thank all the authors for their excellent contributions which really make this monograph one of a kind; as readers will see, these contributions make the monograph thorough and insightful (for an advanced reader) as well as highly readable and pedagogic (for students and beginners). Next, we would like to thank our graduate student Haixiang He for all his help in organizing this monograph and for solving latex problems. Finally we express our sincere thanks to the LNCS Editorial at Springer-Verlag for putting up with our schedule and for all their help and understanding. Without their invaluable help we would not have been able to put this monograph into its beautiful final shape!!! We sincerely hope the readers find the monograph truly useful in their work – be it further research or practice.

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Languages, Compilation Techniques, and Run Time
Systems

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