



# The Interaction of Compilation Technology and Computer Architecture

By David J Lilja, Peter L Bird

Springer-Verlag New York Inc., United States, 2012. Paperback. Book Condition: New. 234 x 155 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.In brief summary, the following results were presented in this work: \* A linear time approach was developed to find register requirements for any specified CS schedule or filled MRT. \* An algorithm was developed for finding register requirements for any kernel that has a dependence graph that is acyclic and has no data reuse on machines with depth independent instruction templates. \* We presented an efficient method of estimating register requirements as a function of pipeline depth. \* We developed a technique for efficiently finding bounds on register requirements as a function of pipeline depth. \* Presented experimental data to verify these new techniques. \* discussed some interesting design points for register file size on a number of different architectures. REFERENCES [1] Robert P. Colwell, Robert P. Nix, John J O Donnell, David B Papworth, and Paul K. Rodman. A VLIW Architecture for a Trace Scheduling Compiler. In Architectural Support for Programming Languages and Operating Systems, pages 180-192, 1982. [2] C. Eisenbeis, W. Jalby, and A. Lichniewsky. Compile-Time Optimization of Memory and...



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