

Dietmar Ebner

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I am a Research Assistant at the Christian Doppler Laboratory “Compilation Techniques for Embedded Processors”. My research is focused on combinatorial optimizations for hard problems, in particular using dynamic programming, local search techniques, and integer linear programming. Current projects are on retargetable compiler backends, instruction selection techniques, and integrated code generation problems for superscalar and VLIW architectures.

Education

Vienna University of Technology 10/99 – 03/05
Student of Computer Sciences
Personal emphasis on efficient algorithms and datastructures, compiler optimizations, and computer security; graduated with honors

University of La Laguna, Spain 03/04 – 09/04
Institute for “*Estadística, Investigación Operativa y Computación*”
Implementation of an exact algorithm for the crossing minimization problem based on integer linear programming (masters thesis).

Higher Technical College (HTL) Villach 09/93 – 04/98
Student of Computer Sciences and Organization; graduated with honors

Employment History

Research Assistant since 10/05
Vienna University of Technology
Research on retargetable components and automatic parallelization for superscalar and VLIW architectures. Funded by ON DEMAND Microelectronics and the “Christian Doppler Laboratory”.

Internship 03/05 – 09/05
Misubishi Electric Research Laboratories Cambridge, MA
Implementation of efficient approximation algorithms for hard transportation problems, in particular group elevator scheduling.

Software-Developer 04/99 – 10/03
Alldata EDV-Systeme Vienna, Austria

Design and implementation of business software and intranet applications for an Austrian online bank (C++, Active Server Pages, Tuxedo, COM, Oracle)

Publications

Dietmar Ebner, Florian Brandner, Bernhard Scholz, Andreas Krall, Peter Wiedermann, and Albrecht Kadlec

Generalized Instruction Selection using SSA-Graphs

In Proc. of LCTES08 (International Conference on Languages, Compilers, and Tools for Embedded Systems, Tucson, AZ)

Florian Brandner, Dietmar Ebner, and Andreas Krall

Compiler Generation from Structural Architecture Descriptions

In Proc. of CASES07 (International Conference on Compilers, Architecture, and Synthesis for Embedded Systems, Salzburg, Austria)

Dietmar Ebner, Florian Brandner, and Andreas Krall

Leveraging Predicated Execution for Multimedia Processing

In Proc. of ESTIMEDIA07 (5th International Workshop on Embedded Systems for Real-Time Multimedia, Salzburg, Austria)

Christoph Buchheim, Markus Chimani, Dietmar Ebner, Carsten Gutwenger, Michael Jünger, Gunnar W. Klau, Petra Mutzel, and René Weiskircher

A Branch-and-Cut Approach to the Crossing Number Problem

Journal on Discrete Optimization, Special Issue in memory of George B. Dantzig

Florian Brandner, Dietmar Ebner, Andreas Krall, Christian Thalinger

Static Verification of Global Heap References in Java Native Libraries

In SPACE06 (Third Workshop on Semantics, Program Analysis, and Computing Environments for Memory Management, Charleston, South Carolina)

Christoph Buchheim, Dietmar Ebner, Michael Jünger, Gunnar W. Klau, Petra Mutzel, and René Weiskircher

Exact Crossing Minimization

In Proc. of GD 2005 (13th International Symposium on Graph Drawing, Limerick, Ireland)

Roberto Tamassia, Editor

Handbook of Graph Drawing and Visualization, To Appear

Chapter “*Crossings and Planarization*”

Christoph Buchheim, Dietmar Ebner, Carsten Gutwenger, Michael Jünger, and Petra Mutzel

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Optimal Crossing Minimization using Integer Linear Programming

Masters Thesis, 2005, Vienna University of Technology

Dietmar Ebner, Gunnar W. Klau, and René Weiskircher

Label Number Maximization in the Slider Model

In Proc. of GD 2004 (12th International Symposium on Graph Drawing, New York, U.S.A.)

Teaching

VU2 185.324 *Compilation Techniques for VLIW Architectures*
Dietmar Ebner and Florian Brandner
Vienna University of Technology, SS08

References

Prof. Dr. Andreas Krall

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Matthew Brand, Ph.D.

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Prof. Dr. Petra Mutzel

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