« The Scientific Work of Reinhard Wilhelm »

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Laudatio für Reinhard Wilhelm — Saarbrücken — June 11th, 2006

Just in case you don't know him

Just in case you don't know him, or arrived late :-)

A talent for organization

Scientific Director of the International Conference and Research Center for Computer Science in Schloß Dagstuhl

- Unique and known by every researcher in computer science in the world
- This achievement only would be the best service for the progress of research in computer science

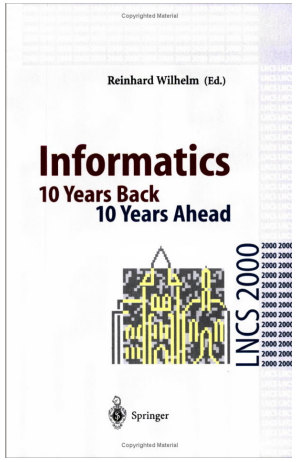
Scientific Director of the International Conference and Research Center for Computer Science in Schloß Dagstuhl

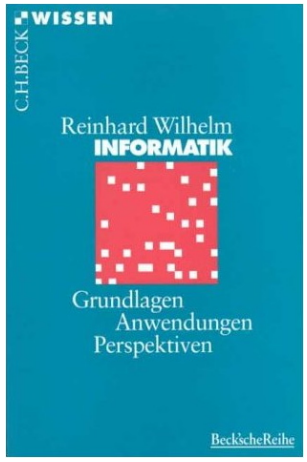
Where you learn most about Reinhard's tastes:

– A friendly place, with highest scientific standards

– Paintings, bicycles, music instruments, french wines, games, literature, good food, library, ...

Organizer of Landmark Scientific Events





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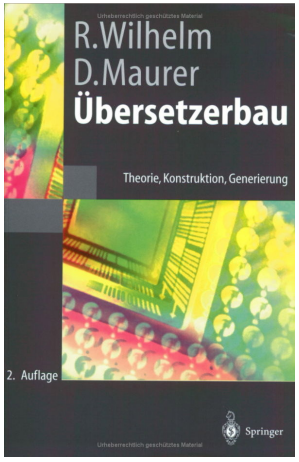
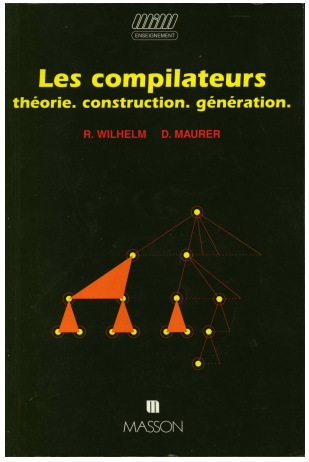
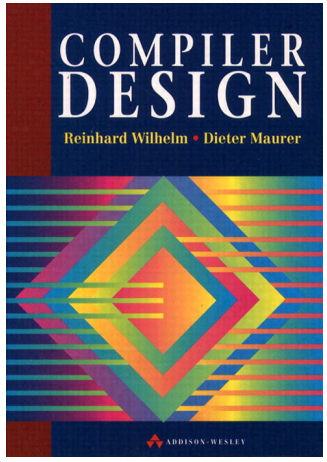
A talent for pedagogy

Chair for Programming Languages and Compiler Construction at Saarland University







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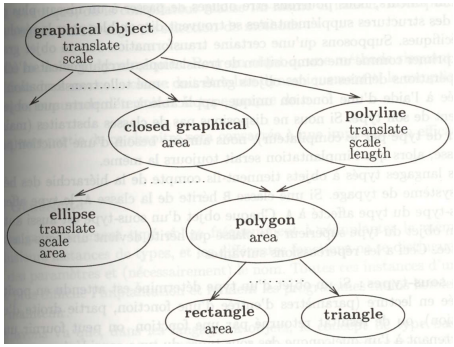
A talent for research

Programming

Foundations of programming & languages

Interest and contributions in all styles of programming (imperative, fonctional, logic, parallel, object, text layout) [14, 15, 16, 17, 19, 21, 22, 24, 25, 26], including programming systems [18] and implementations [20, 22]



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Algorithm Animation and Visualization

Visualization of computations

Illustrate graphically the run-time/abstract computations of programs [27, 28, 29, 30, 31]

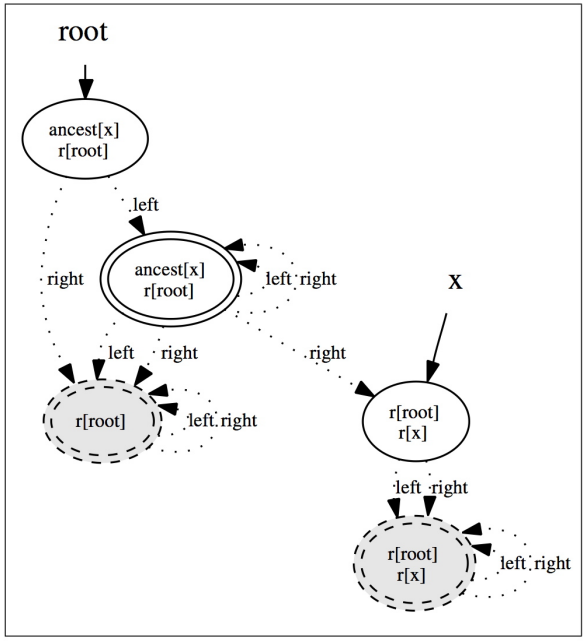

Figure 4: A visualisation graph

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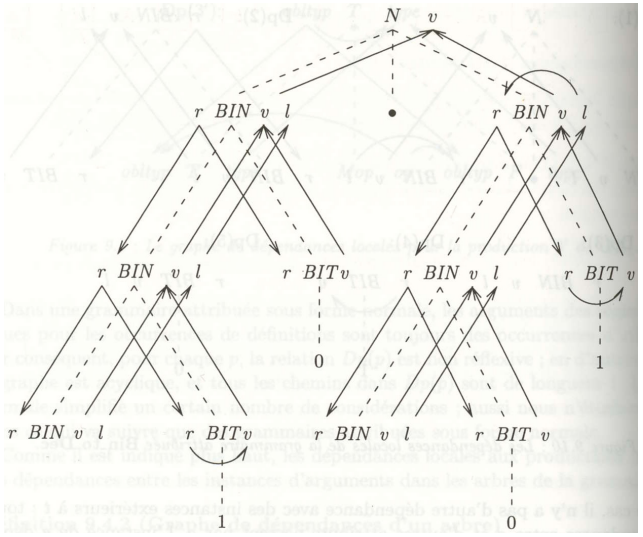
Compiler Construction

Attribute grammars

Study, static analysis, implementation and applications of attribute grammars [32, 33, 34, 35, 36, 37, 39, 40, 41] and generalizations [38]



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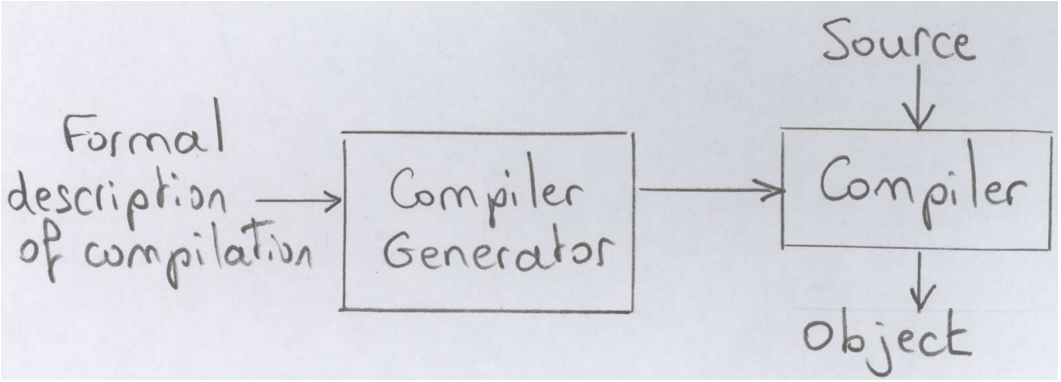
Compilers and compiler generators

- Compilers [46, 47]
- Tools for generating compilers from specifications [42, 43, 44, 45]



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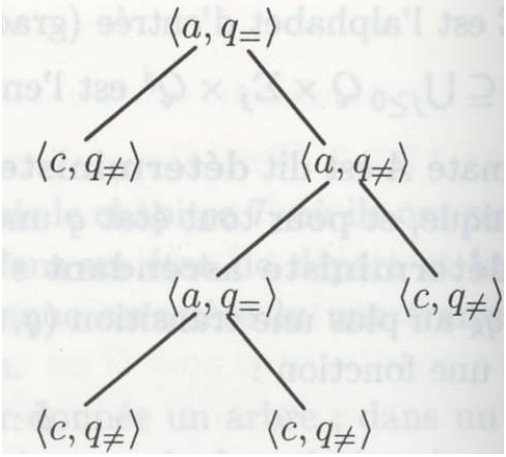
Compilation algorithms

- Graph reduction [49]
- Code generation with transformational grammars/tree automata [48, 50, 52, 53, 54, 56]
- Code optimization [57]
- Virtual machines [51, 55]



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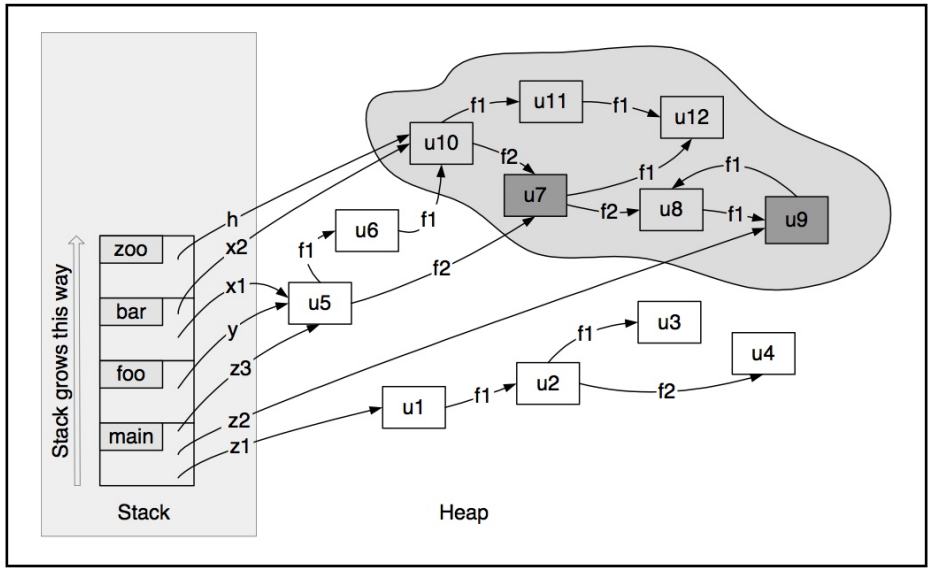
Static Program Analysis and Transformation

Program flow analysis

Static determination of runtime properties of programs [58, 59, 60, 61, 62, 63, 64, 65]



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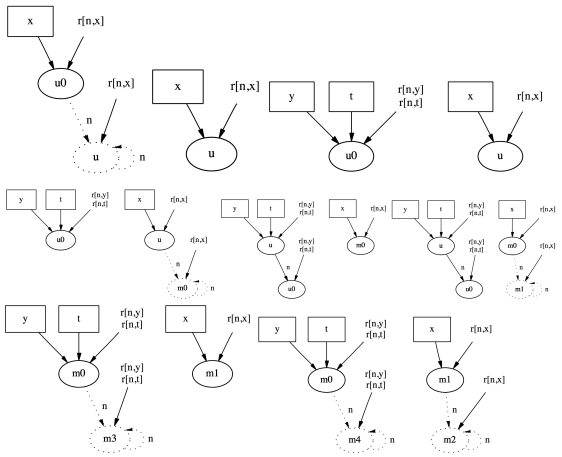
Shape analysis

Static program analysis to determine the possible shapes of dynamically allocated data structures [66, 67, 68, 69, 70, 71, 72, 73, 74]



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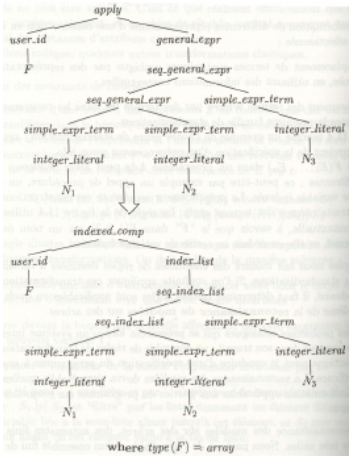
Program transformation

Program transformation and optimization formalized a.o. as decorated abstract tree rewriting or functionnally [75, 76, 77, 78, 79, 80, 81]



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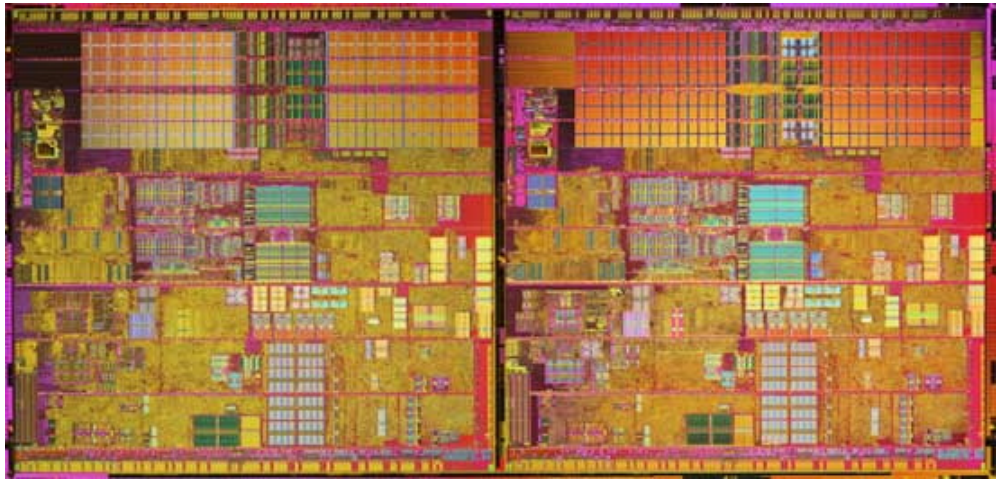
Timing Analysis for Real-Time Systems

Processor models

What is the semantics of processors ? How to describe it ? Which real-time systems are time-predictable ? [82, 83, 84, 85, 86, 87, 88, 89]



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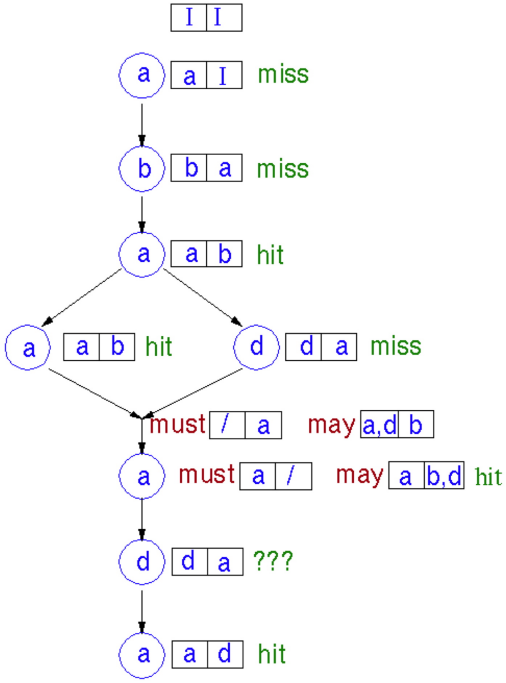
Cache Content Analysis

Static program analysis to determine what can be in the cache at runtime and when [90, 91, 92, 93, 94, 95]



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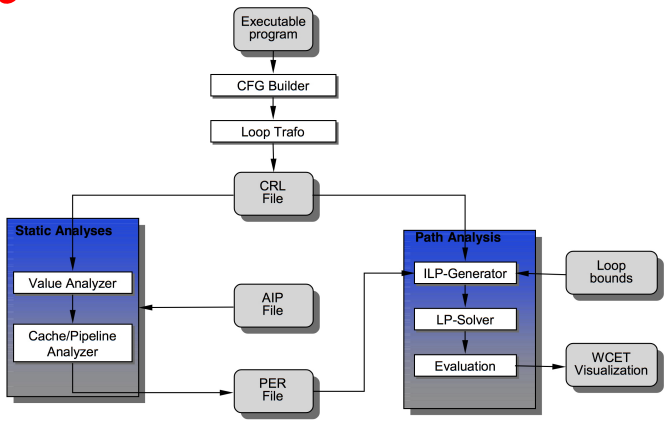
Timing analysis

Static program analysis to determine the worst-case running time of real-time programs [96, 97, 98, 99, 100, 101, 102, 103, 104]



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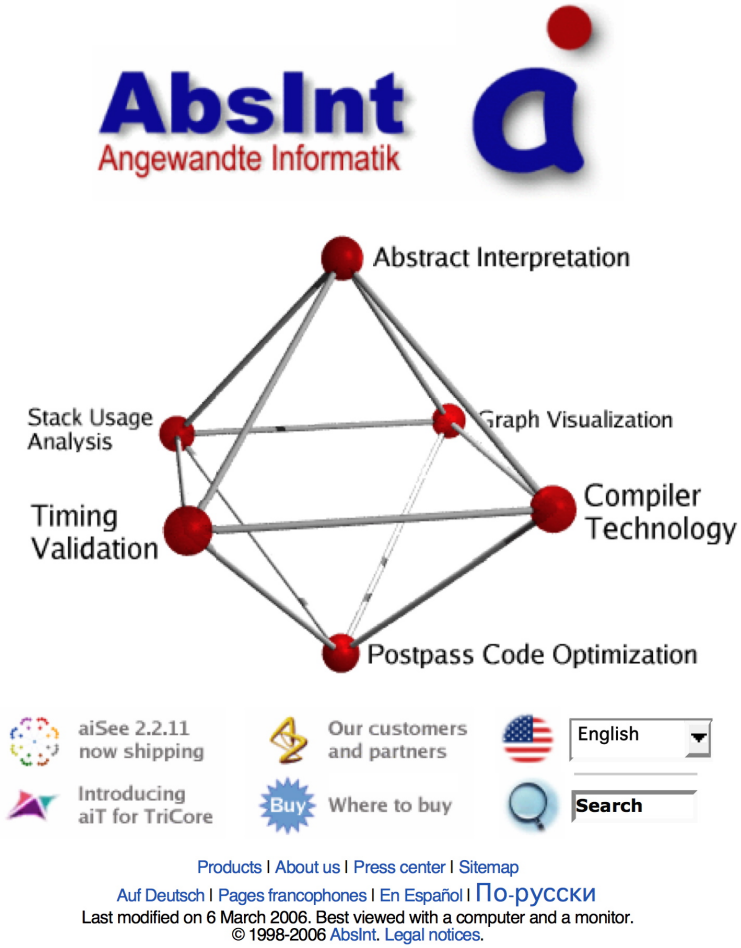
A talent for industrialization

AbsInt

From original research to successful industrialization [105]



Reference

[105] http://www.absint.com/

A talent for collaboration

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A talent for friendship

Reinhard's friends

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and many, many more. . .

The end, bravo Reinhard

Reinhard on the web: rw4.cs.uni-sb.de/~wilhelm/wilhelm.html.