

« The Scientific Work of Reinhard Wilhelm »

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

— 1 —

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



Just in case you don't know him



A talent for organization

— 3 —

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, ...



— 5 —

Organizer of Landmark Scientific Events



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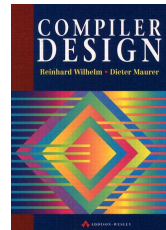
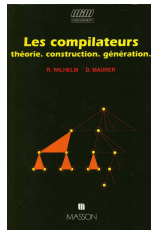


A talent for pedagogy

A talent for research

— 7 —

Chair for Programming Languages and Compiler Construction at Saarland University



— 9 —

Programming

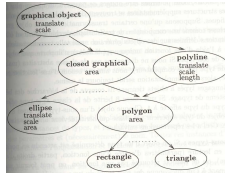
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Foundations of programming & languages

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



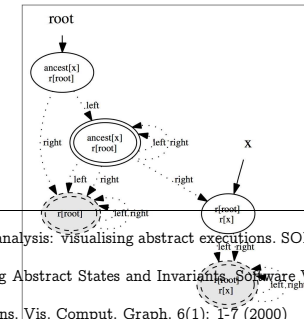
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Algorithm Animation
and Visualization

Visualization of computations

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



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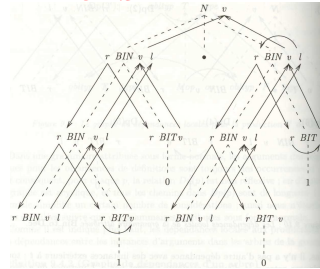
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Compiler Construction



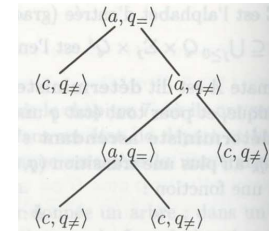
Attribute grammars

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



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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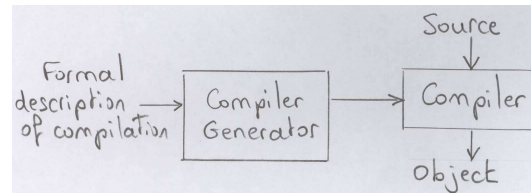
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Compilers and compiler generators

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



Static Program Analysis
and Transformation

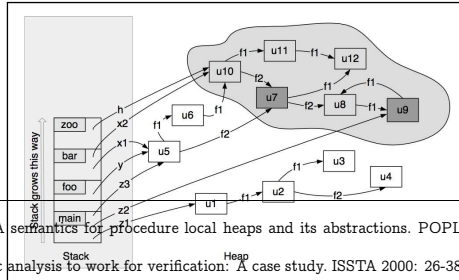
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Program flow analysis

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

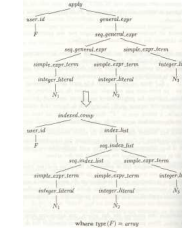


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Program transformation

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

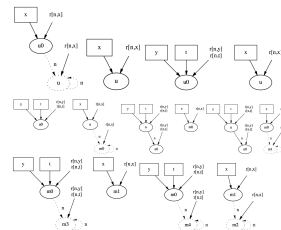


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Shape analysis

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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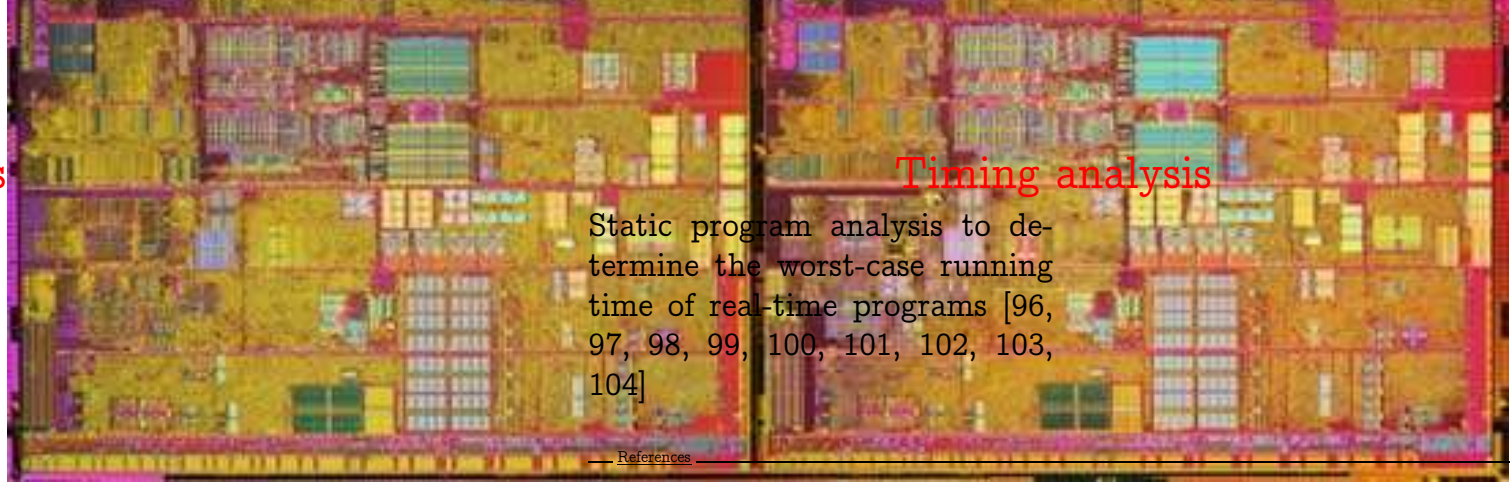
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Timing Analysis
for Real-Time Systems



Processors

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]



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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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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AbsIn

From original research to successful industrialization [105]



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A talent for collaboration

A talent for friendship



Reinhard's friends



and many, many more...

— 31 —

The end, bravo Reinhard

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

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— 31 —

Reinhard's friends



Laudatio für R. Wilhelm, June 11th, 2006

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