CURRICULUM VITAE

FREDERIC DORN

PERSONAL

Date of Birth:	4 June, 1975	**Mobile**:	+47 980 55 660
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EDUCATION AND UNIVERSITY POSITIONS

Since 11/2008	Post-doctoral fellow in Computer Science at the University of Bergen, Norway.
9/2007 – 9/2008	Post-doctoral fellow in Computer Science at the Humboldt-Universität zu Berlin, Germany.
2004–2007	Ph.D.-degree in Computer Science, University of Bergen, Norway. Doctoral thesis: *Subexponential Algorithms: Problems, Techniques, and Structures*. Supervisor Professor Fedor Fomin.
1999–2004	Master of Computer Science and Mathematics Eberhardt-Karl-Universität Tübingen, Germany. Master thesis: *Special Branch Decomposition: A Natural Link between Tree Decompositions and Branch Decompositions*. Study thesis: *Tuning Algorithms for Hard Planar Graph Problems* .
1996–1998	Undergraduate Studies of Mathematics at the Universität Augsburg, Germany.

RESEARCH INTERESTS

- Computer science: Design and analysis of algorithms; Algorithm engineering.
- Applied mathematics: Discrete mathematics; Combinatorics; Graph theory.

PROFESSIONAL EXPERIENCE

Autumn 2010/09	Teaching the postgraduate course *Advanced algorithms*, Department of Informatics, University of Bergen, Norway.
Spring 2006/05/03	Teaching assistant for the postgraduate course *Complexity Theory*, Department of Informatics, University of Bergen, Norway.
2000–2003	Graduate assistant at the University of Tübingen, Germany: Designing the software-package *FPT-toolkit*: Implementing, analyzing, and evaluating fixed-parameter algorithms, implemented with LEDA in C++.
1999–2000	Programming job at the company WWL in Pliezhausen/Stuttgart. Online programming of databases and dynamic web-pages in PL/SQL, HTML, Javascript and Perl.

Software programming tools

- Programming: C++, Java, Scheme, Perl, LEDA.
- Symbolic and computational mathematics: Mathematica, Matlab.
- Database : Oracle 9x, PL/SQL.

Graduate courses

◇ Topics on algorithms: parameterized, randomized, and selected graph algorithms, computational biology, complexity theory.

◇ Topics on applied and pure mathematics: Differential geometry, Rieman geometry, statistic, algebraic topology, bio-mathematics.

◇ Operating and distributed systems - parallel and distributed computing.

◇ Computer architecture - basic, parallel and high performance, hardware verification.

◇ Topics on ethics: resistance movement "Weisse Rose"in the national socialism, ethic in medicine and biology, research and healing - a discussion about the new genetics.

Awards/scholarships

2010	1^{st} place in a public competition for an Associate Professorship in Theory of Computation and Computational Complexity at the Institute of Informatics of UFRGS (Universidade Federal do Rio Grande do Sul), Porto Alegre, Brazil.
2006	Award of the European Association for Theoretical Computer Science (EATCS): Best Student ESA paper (European Symposium on Algorithms).
2004/05	Recipient of project grants by the L. Meltzer Hoeyskolefond, University of Bergen, Norway.
2003	Study grant of the German academic exchange service (DAAD).

Participation in research projects

Since 2008	*Network Searching: New Foundational Directions* NFR (Norwegian Research Council) FRINAT grant, Norway. Scientific Advisor: Fedor Fomin.
2007-2008	*Complexity of constraint satisfaction problems* DFG (German Research Council) grant, Germany. Scientific Advisor: Martin Grohe.
2004-2007	*Exact algorithms for hard problems* NFR FRINAT grant, Norway. Scientific Advisor: Fedor Fomin.

LIST OF PUBLICATIONS

Journals

2011 *Tight Bounds and a Fast FPT Algorithm for Directed Max-Leaf Spanning Tree*, Paul Bonsma and Frederic Dorn. To appear in ACM Transactions on Algorithms.

2010 *Efficient Exact Algorithms on Planar Graphs: Exploiting Sphere Cut Decompositions*, Hans L. Bodlaender, Frederic Dorn, Fedor V. Fomin, and Eelko Penninkx. Algorithmica, 58(3): pages 790-810.

2010 *Dynamic Programming and Planarity: Improved Tree-Decomposition Based Algorithms*, Frederic Dorn. Discrete Applied Mathematics, 158: pages 800-808.

2009 *Semi-nice tree-decompositions: the best of branchwidth, treewidth and pathwidth with one algorithm* , Frederic Dorn and Jan Arne Telle. Discrete Applied Mathematics, 157: pages 2737-2746. Special Issue on Tree Decompositions.

2008 *Subexponential parameterized algorithms*, Fedor V. Fomin, Frederic Dorn, and Dimitrios M. Thilikos. Computer Science Review, 2(1): pages 29-39.

2005 *Experimental Evaluation of a Tree Decomposition Based Algorithm for Vertex Cover on Planar Graphs*, Jochen Alber, Frederic Dorn and Rolf Niedermeier. Discrete Applied Mathematics, 145(2): pages 219-231.

Conference proceedings

2010 *Fast Minor Testing in Planar Graphs*, Isolde Adler, Frederic Dorn, Fedor V. Fomin, Ignasi Sau, and Dimtrios M. Thilikos. Proceedings of the 18th Annual European Symposium on Algorithms (ESA 2010), vol. 6346 of LNCS, Springer, pages 97 - 109.

2010 *Efficient Algorithms for Eulerian Extension*, Frederic Dorn, Hannes Moser, Rolf Niedermeier, and Mathias Weller. Proceedings of the 36th International Workshop on Graph Theoretic Concepts in Computer Science (WG 2010), vol. 6410 of LNCS, Springer, pages 100 - 111.

2010 *Faster Parameterized Algorithms for Minor Containment*, Isolde Adler, Frederic Dorn, Fedor V. Fomin, Ignasi Sau, and Dimtrios M. Thilikos. Proceedings of the 12th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT 2010), vol. 6139 of LNCS, Springer, pages 322-333.

2010 *Planar Subgraph Isomorphism Revisited*, Frederic Dorn. Proceedings of the 27th International Symposium on Theoretical Aspects of Computer Science (STACS 2010), pages 263-274.

2010 *Beyond Bidimensionality: Parameterized Subexponential Algorithms on Directed Graphs*, Frederic Dorn, Fedor V. Fomin, Daniel Lokshtanov, Venkatesh Raman, and Saket Saurabh. Proceedings of the 27th International Symposium on Theoretical Aspects of Computer Science (STACS 2010), pages 251-262.

2008 *Tight Bounds and a Fast FPT Algorithm for Directed Max-Leaf*, Paul Bonsma and Frederic Dorn. Proceedings of 16th Annual European Symposium (Algorithms/ESA 2008), vol. 5193 of LNCS, Springer, pages 222-233.

2008 *Catalan Structures and Dynamic Programming in H-minor-free graphs*, Frederic Dorn, Fedor V. Fomin, and Dimitrios M. Thilikos. Proceedings of the 19th Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2008), pages 631-640.

2007 *Subexponential parameterized algorithms*, Frederic Dorn, Fedor V. Fomin, and Dimitrios M. Thilikos. Proceedings of the 34th International Colloquium on Automata, Languages and Programming (ICALP 2007), vol. 4596 of LNCS, Springer, pages 15-27.

2007 *How to use planarity efficiently: new tree-decomposition based algorithms*, Frederic Dorn. Proceedings of the 33rd International Workshop on Graph-Theoretic Concepts in Computer Science (WG 2007), vol.4769 of LNCS, Springer, pages 280-291.

2006 *Dynamic Programming and Fast Matrix Multiplication*, Frederic Dorn. Proceedings of 14th Annual European Symposium (Algorithms/ESA 2006), Springer LNCS 4168, pages 280-291. *ESA 2006 EATCS award: Best student ESA paper*.

2006 *Fast Subexponential Algorithm for Non-local Problems on Graphs of Bounded Genus*, Frederic Dorn, Fedor V. Fomin, and Dimitrios M. Thilikos. Proceedings of 10th Scandinavian Symposium and Workshops on Algorithm Theory (SWAT 2006), Springer LNCS 4059, pages 172-183.

2006 *Two birds with one stone: the best of branchwidth and treewidth with one algorithm*, Frederic Dorn and Jan Arne Telle. Proceedings of 7th Latin American Theoretical Informatics Symposium (LATIN 2006), Springer LNCS 3887, pages 386-397.

2005 *Efficient Exact Algorithms on Planar Graphs: Exploiting Sphere Cut Branch Decompositions*, Hans L. Bodlaender, Frederic Dorn, Fedor V. Fomin, and Eelko Penninkx. Proceedings of 13th Annual European Symposium (Algorithms-ESA 2005), LNCS 3669, pages 95-106.

Academic works

2007 *Designing Subexponential Algorithms: Problems, Techniques & Structures.*, Frederic Dorn. PhD-thesis. Online publication, Bergen, Norway.
`https://bora.uib.no/handle/1956/2449`

2004 *Special Branch Decomposition: A Natural Link between Tree Decompositions and Branch Decompositions*, Frederic Dorn. Master thesis, Universität Tübingen, Germany.

2003 *Tuning Algorithms for Hard Planar Graph Problems*, Frederic Dorn. Undergraduate thesis, Universität Tübingen, Germany. (Documentation of the FPT-TOOLKIT).

Others

2007 *An FPT Algorithm for Directed Spanning k-Leaf*, Paul Bonsma and Frederic Dorn. Technical report, http://arxiv.org/abs/0711.4052

2001 *Experiments on Optimally Solving NP-complete Problems on Planar Graphs*, Jochen Alber, Frederic Dorn, and Rolf Niedermeier. Manuskript,
http://citeseer.ist.psu.edu/478627.html.

OTHER RESEARCH ACTIVITIES

Committees

- Organizing committee of SWAT'10, Scandinavian Workshop on Algorithm Theory, in Bergen, Norway, June 2010.
- Program committee of IMAGINE'07, First international workshop on Mobility, Algorithms, Graph theory In dynamic Networks, in conjunction with DISC'07, Cyprius, September 2007.
- Organizing committee of WG'06, Graph theoretical concepts in computer science, in Bergen, Norway, June 2006.

Journal and conference refereeing

- SIAM J. on Discrete Mathematics, Discrete Applied Mathematics, Theoretical Computer Science, Computational Optimization and Applications;
- SODA Symposium on Discrete Algorithms,
- ALENEX Workshop on Algorithm Engineering and Experiments,
- ICALP International Colloquium on Automata, Languages and Programming,
- STACS Symposium on Theoretical Aspects of Computer Science,
- SWAT Scandinavian Symposium and Workshops on Algorithm Theory,
- IWPEC International Workshop on Parameterized and Exact Computation,
- WG Graph Theoretic Concepts of Computer Science.

Research visits

- Max-Planck-Institut fr Informatik, Saarbrücken, Germany, visiting Dr. Danny Hermelin, March 2010.
- Department of Computer Science, University of Jena, Germany, visiting Professor Rolf Niedermeier, October 2009.
- Department of Computer Science, University of Victoria, Canada, visiting Professor Ulrike Steger, October 2006.
- Department of Mathematics, Simon-Fraser-University, Vancouver, Canada, visiting Professor Bojan Mohar, October 2006–March 2007.
- Department of Computer Science, University of Utrecht, Netherlands, visiting Professor Hans Bodlaender, September 2005 and September 2006.
- Department of Computer Science, Universitat Politecnica de Catalunya, Barcelona, Spain, visiting Professor Dimitrios Thilikos, December 2005.
- Department of Computer Science, University of Lund, Sweden, visiting Professor Andrzej Lingas, September 2005.

Other Activities

Languages

- Fluently: German (native), English and Norueguês Norwegian (Bokmål)
- Advanced knowledge: Spanish
- Basic knowledge: Portuguese, Italian, French e Latin

Hobbies

- Violoncello, Hiking, Skiing, Biking, Tango, Literature.