

CURRICULUM VITAE

FREDERIC DORN

PERSONLIG

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| Fødselsdato: | 4 June, 1975 | Mobil: | +47 980 55 660 |
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UTDANNING OG UNIVERSITETETSSTILLINGER

Siden 11/2008 Postdoktor i informatikk ved Universitetet i Bergen, Norge.

9/2007 – 9/2008 Postdoktor i informatikk ved Humboldt-Universität zu Berlin, Tyskland.

2004–2007 Ph.D. i informatikk ved Universitetet i Bergen, Norge.
Doktorgavhandling: *Subexponential Algorithms: Problems, Techniques, and Structures*.
Veileder Professor Fedor Fomin.

1999–2004 Master i informatikk og matematikk
Eberhardt-Karl-Universität Tübingen, Tyskland.
Masteravhandling: *Special Branch Decomposition: A Natural Link between Tree Decompositions and Branch Decompositions* og *Tuning Algorithms for Hard Planar Graph Problems*.

1996–1998 Studier i matematikk ved Universität Augsburg, Tyskland.

FORSKNINGSINTERESSER

- Informatik: Design og analyse av algoritmer; Algoritme engineering.
- Anvendt matematikk: Diskrete matematikk; Kombinatorikk; Grafteori.

YRKESERFARING

Høst 2010/09 Undervisning hovedfagskurs *Avanserte algoritmer*, Institutt for informatikk ved Universitetet i Bergen, Norge.

Vår 2006/05/03 Seminarleder hovedfagskurs *Kompleksitetsteori*, Institutt for informatikk ved Universitetet i Bergen, Norge.

2000–2003 Forskningsassistent ved Universität in Tübingen, Tyskland: Designing software-pakken *FPT-toolkit*: Implementering, analysering, and evaluering av fast-parameter algoritmer, implementert med LEDA i C++.

1999–2000 Programmeringsjobb ved internetbedrift WWL i Pliezhausen/Stuttgart. Online programmering av databaser og dynamiske websider i PL/SQL, HTML, Javascript and Perl.

Programmeringsverktøy

- Programmering: C++, Java, Scheme, Perl, LEDA.
- Symbolske og beregningsorienterte matematikk: Mathematica, Matlab.
- Databaser : Oracle 9x, PL/SQL.
- Annet: LaTeX, PowerPoint, Excell.

Hovedfagskurser

- ◇ Emner på algoritmer: parametriserte, randomiserte, og utvalgte grafalgoritmer, beregningsorienterte biologi, kompleksitetsteori.
- ◇ Emner på anvendt og rene matematikk: Differensialgeometri, Riemann geometri, statistikk, algebraiske topologi, bio-matematikk.
- ◇ Drifts-og distribuerte systemer - parallell og distribuert databehandling.
- ◇ Datamaskinarkitektur - grunnleggende, parallele og høy ytelse, hardware verifikasjon.
- ◇ Emner på etikk: motstandsbevegelse "Weisse Rose" i nasjonalsosialismen; etikk i medisin og biologi, "forskning og healing - en diskusjon om den nye genetikk".

Utmerkelser og stipend

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| 2010 | 1 st plass i en offentlig konkurranse for en førsteamanuensis i Beregningsteori og Beregningsorienterte Kompleksitet, Institutt for informatikk, UFRGS (Universidade Federal do Rio Grande do Sul), Porto Alegre, Brazil. |
| 2006 | Tildelingen av europeiske foreningen for teoretisk informatikk (EATCS): Best Student ESA paper (European Symposium on Algorithms). |
| 2004/05 | Mottaker av prosjekttilskudd av L. Meltzer Hoeykolefond, Universitetet i Bergen, Norge. |
| 2003 | Studiestipend av den tyske faglig utveksling service (DAAD). |

Deltakelse i forskningsprosjekter

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| Siden 2008 | <i>Network Searching: New Foundational Directions</i> NFR (Norske Forskningsrådet) FRINAT stipend, Norge. Vitenskapelig rådgiver: Fedor Fomin. |
| 2007-2008 | <i>Complexity of constraint satisfaction problems</i> DFG (Tyske Forskningsrådet) stipend, Tyskland. Vitenskapelig rådgiver: Martin Grohe. |
| 2004-2007 | <i>Exact algorithms for hard problems</i> NFR FRINAT stipend, Norge. Vitenskapelig rådgiver: Fedor Fomin. |

PUBLIKASJONSLISTE

Tidsskrifter

- 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.

Konferansproceedings

- 2010 *Fast Minor Testing in Planar Graphs*, Isolde Adler, Frederic Dorn, Fedor V. Fomin, Ignasi Sau, and Dimitrios 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 Dimitrios 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.

Vitenskapelige arbeider

- 2007 *Designing Subexponential Algorithms: Problems, Techniques & Structures.*, Frederic Dorn. PhD-avhandling. Online publisering, Bergen, Norge.
<https://bora.uib.no/handle/1956/2449>
- 2004 *Special Branch Decomposition: A Natural Link between Tree Decompositions and Branch Decompositions*, Frederic Dorn. Masteravhandling, Universität Tübingen, Tyskland.
- 2003 *Tuning Algorithms for Hard Planar Graph Problems*, Frederic Dorn. Avhandling, Universität Tübingen, Tyskland. (Documentasjon av software-pakken FPT-TOOLKIT).

Andre

- 2007 *An FPT Algorithm for Directed Spanning k-Leaf*, Paul Bonsma and Frederic Dorn. Teknisk rapport, <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>.

ANDRE FORSKNINGSAKTIVITETER

Komiteer

- Arrangementskomiteen av SWAT'10, Scandinavian Workshop on Algorithm Theory, Bergen, Norge, Juni 2010.
- Programmkomiteen av IMAGINE'07, First international workshop on Mobility, Algorithms, Graph theory In dynamic Networks, in conjunction with DISC'07, Cyprus, September 2007.
- Arrangementskomiteen av WG'06, Graph theoretical concepts in computer science, Bergen, Norge, Juni 2006.

Tidsskrift og konferans dommer

- 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.

Forskningsbesøk

- Max-Planck-Institut für Informatik, Saarbrücken, Tyskland, besøk Dr. Danny Hermelin, Mars 2010.
- Department of Computer Science, University of Jena, Tyskland, besøk Professor Rolf Niedermeier, Oktober 2009.
- Department of Computer Science, University of Victoria, Kanada, besøk Professor Ulrike Steger, Oktober 2006.
- Department of Mathematics, Simon-Fraser-University, Vancouver, Kanada, besøk Professor Bojan Mohar, Oktober 2006–March 2007.
- Department of Computer Science, University of Utrecht, Netherlands, besøk Professor Hans Bodlaender, September 2005 and September 2006.
- Department of Computer Science, Universitat Politecnica de Catalunya, Barcelona, Spania, besøk Professor Dimitrios Thilikos, Desember 2005.
- Department of Computer Science, University of Lund, Sverige, besøk Professor Andrzej Lingas, September 2005.

ANDRE AKTIVITETER

Språk

- Flytende: Tysk (native), Engelsk og Norueguês Norsk (Bokmål)
- Avansert kunnskap: Spansk
- Grunnleggende kunnskap: Portugisisk, Italiensk, Fransk og Latinsk

Hobbyer

- Cello, Vandring, Ski, Sykling, Tango, Litteratur.