

CURRICULUM VITAE

YNGVE VILLANGER

PERSONAL

Date of Birth:	26 August, 1974	Mobile:	+47 911 32 887
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RESEARCH INTERESTS

- Theoretic computer science; Algorithm theory; Design and analysis of algorithms.
 - Discrete mathematics; Graph theory; Combinatorics.
 - Algorithm engineering.
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RELEVANT EDUCATION

2006	PhD in Informatics, University of Bergen
2002	Cand. Scient. in Informatics, University of Bergen

WORK EXPERIENCE

Since April 2010 Researcher in Informatics, University of Bergen

Sep - Dec 2011 temporary Associate Professor of Informatics, University of Bergen

Aug 09 - Mar 10 temporary Associate Professor, Bergen University College

May 06 - Feb 10 PostDoc in Informatics, University of Bergen

Sep - Dec 2007 temporary Associate Professor of Informatics, University of Bergen

2006 - 2007 Directing board of Faculty of Mathematics and Natural Sciences, University of Bergen

2000-2002 Software Engineer, Infodoc A/S, Bergen

1997-2000 Technical Support, Infodoc A/S, Bergen

COURSES TAUGHT

- Autumn 2011 INF102 *Algorithms, Data Structures and Programming*, Univ. of Bergen
- Spring 2010 TOD133 *Advanced algorithms*, Bergen University College
- Autumn 2009 TOD062 *Basic Programming*, Bergen University College
- Autumn 2007 INF102 *Algorithms, Data Structures and Programming*, Univ. of Bergen
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RESEARCH ADMINISTRATIVE SERVICE

Program and organizing committees

- May 2011 Organizer, Treewidth workshop 2011
- June 2010 Program and organizing committee member, 12th Scandinavian Workshop on Algorithm Theory (SWAT 2010)
- Oct. 2009 Organizing committee member, Fourth International Workshop on Graph Classes (GROW 2009)

Invited presentations and lectures

- *Four steps and a Subexponential Parameterized Algorithm for Minimum Fill-in*. Lecture at the Treewidth Workshop 2011, Bergen Norway
- *Finding Treewidth*. Invited speaker at IMPECS School on Parameterized and Exact Computation 2010, Chennai India

Journal and conference refereeing

SIAM Journal on Computing, Journal of Graph Algorithms and Applications, Theoretical Computer Science, Discrete Applied Mathematics, International Workshop on Parameterized and Exact Computation (IWPEC), Workshop on Graph Theoretic Concepts of Computer Science (WG), European Symposium on Algorithms (ESA), International Conference on Algorithms and Complexity (CIAC), Latin American Theoretical Informatics Symposium (LATIN), Symposium on Mathematical Foundations of Computer Science (MFCS), International Symposium on Fundamentals of Computation Theory (FCT), Algorithms and Data Structures Symposium (WADS), ACM-SIAM Symposium on Discrete Algorithms (SODA)

Participation in research projects

Principal investigator *SCOPE-Exploiting Structure to Cope with Hard Problems*, NFR FRI-TEK grant, Norway. Project Manager: Pinar Heggernes.

PostDoc *Exact algorithms for hard problems*, NFR FRINAT grant, Norway. Project Manager: Fedor V. Fomin.

Research visits

University of Trier, Germany, [December 2012]

Universite d'Orleans, France, [June 2011], [June 2009], [Jan-July 2005]

Institute of Mathematical Sciences, India, [December 2010], [December 2008]

Universidad de Chile, Santiago, Chile, [January 2009]

Utrecht University, The Netherlands, [March 2008]

Universit Paul Verlaine - Metz, France, [May 2005]

PUBLICATIONS

Journals

- 2013 Parameterized complexity of vertex deletion into perfect graph classes
Pinar Heggernes, Pim van't Hof, Bart Jansen, Stefan Kratsch and Yngve Villanger
Theoretical Computer Science, to appear.
- 2013 Proper interval vertex deletion
Pim van't Hof and Yngve Villanger
Algorithmica, 65(4) Pages 845-867.
- 2012 Treewidth computation and extremal combinatorics
Fedor V. Fomin and Yngve Villanger
Combinatorica 32(3): 289-308.
- 2012 Kernel(s) for Problems with No Kernel: On Out-Trees with Many Leaves, *Henning Fernau, Fedor V. Fomin, Daniel Lokshantov, Daniel Raible, Saket Saurabh and Yngve Villanger*. ACM Transactions on Algorithms, 8(4): Article No. 38.
- 2012 Local search: Is brute-force avoidable? *Michael R. Fellows, Fedor V. Fomin, Daniel Lokshantov, Frances A. Rosamond, Saket Saurabh, Yngve Villanger*. J. Comput. Syst. Sci. 78(3), pages 707-719.
- 2011 Faster parameterized algorithms for Minimum Fill-In, *Hans Bodlaender, Pinar Heggernes, and Yngve Villanger*. Algorithmica 61(4), pages 817-838.

- 2009 Interval Completion is Fixed Parameter Tractable,
Yngve Villanger, Pinar Heggernes, Christophe Paul, and Jan Arne Telle
SIAM Journal on Computing 38-5, pages 2007-2020.
- 2008 Improved Algorithms for Feedback Vertex Set Problems,
Jianer Chen, Fedor V. Fomin, Yang Liu, Songjian Lu, and Yngve Villanger
Journal of Computer and System Sciences 74(7), pages 1188-1198.
- 2008 Exact algorithms for treewidth and minimum fill-in,
Fedor V. Fomin, Ioan Todinca, Dieter Kratsch, and Yngve Villanger
SIAM Journal on Computing 38-3, pages 1058-1079.
- 2006 A vertex incremental approach for dynamically maintaining chordal graphs,
Anne Berry, Pinar Heggernes, and Yngve Villanger
Discrete Mathematics 306-3, pages 318-336.
- 2006 Lex M versus MCS-M, *Yngve Villanger*
Discrete Mathematics 306-3, pages 393-400.
- 2006 A wide-range algorithm for minimal triangulation from an arbitrary ordering
Anne Berry, Jean-Paul Bordat, Pinar Heggernes, Genevieve Simonet, and Yngve Villanger, Journal of Algorithms 58-1, pages 33 - 66.
- 2005 Computing Minimal Triangulations in Time $O(n^\alpha \log n) = o(n^{2.376})$
Pinar Heggernes, Jan Arne Telle, and Yngve Villanger
SIAM Journal on Discrete Mathematics 19-4, pages 900-913.

Conference proceedings

- 2013 A Multivariate Analysis of Some DFA Problems *Henning Fernau, Pinar Heggernes and Yngve Villanger*,
Proceedings of LATA 2013, To appear.
- 2013 Tight bounds for Parameterized Complexity of Cluster Editing *Fedor Fomin, Stefan Kratsch, Marcin Pilipczuk, Micha Pilipczuk and Yngve Villanger*,
Proceedings of STACS 2013, To appear.
- 2013 Searching for better fill-in *Fedor V. Fomin and Yngve Villanger*,
Proceedings of STACS 2013, To appear.
- 2012 FPT algorithms for domination in biclique-free graphs *Jan Arne Telle and Yngve Villanger*,
ESA 2012, LNCS 7501, pages 802-812.
- 2012 A Polynomial kernel for Proper Interval Vertex Deletion *Fedor V. Fomin, Saket Saurabh and Yngve Villanger*,
ESA 2012, Springer Verlag, LNCS 7501, pages 467-478.
- 2012 Maximum number of minimal feedback vertex sets in chordal graphs and cographs
Jean-Francois Couturier, Pinar Heggernes, Pim van 't Hof, and Yngve Villanger,
COCOON 2012, Springer Verlag, LNCS 7434, pages 133-144.

- 2012 On the parameterized complexity of finding separators with non-hereditary properties *Pinar Heggernes, Pim van't Hof, Dniel Marx, Neeldhara Misra and Yngve Villanger*,
WG 2012, Springer Verlag, LNCS, 7551, pages 332-343.
- 2012 Subexponential Parameterized Algorithm for Minimum Fill-in
Fedor V. Fomin and Yngve Villanger,
Proceedings of the Twenty-Second Annual ACM-SIAM Symposium on Discrete Algorithms SODA 2012, pages 1737-1746.
- 2012 k-Gap Interval Graphs
Fedor Fomin, Serge Gaspers, Petr Golovach, Karol Suchan, Stefan Szeider, Erik Jan Van Leeuwen, Martin Vatshelle and Yngve Villanger,
LATIN 2012, Springer Verlag, LNCS 7256, Pages 350-361.
- 2011 Minimum Fill-in of Sparse Graphs: Kernelization and Approximation
Fedor V. Fomin, Geevarghese Philip, and Yngve Villanger,
FSTTCS 2011, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, 13, Pages 164-175.
- 2011 Exact algorithm for the maximum induced planar subgraph problem
Fedor Fomin, Ioan Todinca and Yngve Villanger,
ESA 2011, Springer Verlag, LNCS 6942, Pages 287-298.
- 2011 Parameterized Complexity of Vertex Deletion into Perfect Graph Classes
Pinar Heggernes, Pim Van 'T Hof, Bart Jansen, Stefan Kratsch and Yngve Villanger,
FCT 2011, Springer Verlag, LNCS 6914, Pages 240-251.
- 2011 Enumerating Minimal Subset Feedback Vertex Sets
Fedor V. Fomin, Pinar Heggernes, Dieter Kratsch, Charis Papadopoulos and Yngve Villanger,
WADS 2011, Springer Verlag, LNCS 6844, Pages 399-410.
- 2010 Induced Subgraph Isomorphism on Interval and Proper Interval Graphs
Pinar Heggernes, Daniel Meister, and Yngve Villanger
ISAAC 2010, Springer Verlag, LNCS 6507, Pages 399-409.
- 2010 Proper Interval Vertex Deletion, *Yngve Villanger*
IPEC 2010, Springer Verlag, LNCS 6478, Pages 228-238.
- 2010 Solving Capacitated Dominating Set by using Covering by Subsets and Maximum Matching, *Mathieu Liedloff, Ioan Todinca and Yngve Villanger*
WG 2010, Springer Verlag, LNCS 6410, Pages 88-99.
- 2010 A Quartic Kernel for Pathwidth-One Vertex Deletion
Geevarghese Philip, Venkatesh Raman and Yngve Villanger
WG 2010, Springer Verlag, LNCS 6410, Pages 196-207.
- 2010 A parameterized algorithm for Chordal Sandwich
Pinar Heggernes, Federico Mancini, Jesper Nederlof, and Yngve Villanger
CIAC 2010, Springer Verlag, LNCS 6078, Pages 120-130.

- 2010 Finding Induced Subgraphs via Minimal Triangulations
Fedor V. Fomin and Yngve Villanger, STACS 2010, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik 2010, Pages 383-394.
- 2009 Computing pathwidth faster than 2^n , *Karol Suchan and Yngve Villanger*
IWPEC 2009, Springer Verlag, LNCS 5917, pages 324-335.
- 2009 Local Search: Is brute-force avoidable?
Michael R. Fellows, Fedor V. Fomin, Daniel Lokshantov, Frances A. Rosamond, Saket Saurabh, and Yngve Villanger, 21th International Joint Conference on Artificial Intelligence (IJCAI-09), pages 486-491.
- 2009 Kernel(s) for Problems with No Kernel: On Out-Trees with Many Leaves
Henning Fernau, Fedor V. Fomin, Daniel Lokshantov, Daniel Raible, Saket Saurabh and Yngve Villanger
STACS 2009, Dagstuhl Seminar Proceedings, 09001, pages 421-432.
- 2008 Treewidth Computation and Extremal Combinatorics
Fedor V. Fomin and Yngve Villanger
ICALP 2008, Springer Verlag, LNCS 5125, pages 210-221.
- 2008 Faster parameterized algorithms for Minimum Fill-In
Hans L. Bodlaender, Pinar Heggernes and Yngve Villanger
ISAAC 2008, Springer Verlag, LNCS 5369, pages 282-293.
- 2008 Capacitated Domination and Covering: A Parameterized Perspective
Michael Dom, Daniel Lokshantov, Saket Saurabh and Yngve Villanger
IWPEC 2008, Springer Verlag, LNCS 5018, pages 78-90.
- 2008 Parameterized complexity for domination problems on degenerate graphs
Petr Golovach and Yngve Villanger
WG 2008, Springer Verlag, LNCS 5344, pages 195-205.
- 2007 Improved Algorithms for the Feedback Vertex Set Problems
Jianer Chen, Fedor V. Fomin, Yang Liu, Songjian Lu, and Yngve Villanger, WADS 2007, Springer Verlag, LNCS 4619, Pages 422 - 433.
- 2007 Interval Completion is Fixed Parameter Tractable
Pinar Heggernes, Christophe Paul, Jan Arne Telle, and Yngve Villanger
Proceedings STOC 2007 - 39th ACM Symposium on Theory of Computing, June 2007, San Diego, USA. ACM 2007, pages 374-381.
- 2007 Characterizing minimal interval completions: Towards better understanding of profile and pathwidth
Pinar Heggernes, Karol Suchan, Ioan Todinca, and Yngve Villanger
STACS 2007, Springer Verlag, LNCS 4393, Pages 236 - 247.
- 2006 Improved exponential-time algorithms for treewidth and minimum fill-in
Yngve Villanger
LATIN 2006, Springer Verlag, LNCS 3887, Pages 800 - 811.

- 2005 Minimal interval completions
Pinar Heggernes, Karol Suchan, Ioan Todinca, and Yngve Villanger
ESA 2005, Springer Verlag, LNCS 3669, Pages 403 - 414.
- 2005 Computing Minimal Triangulations in $O(n^\alpha \log n)$ Time
Pinar Heggernes, Jan Arne Telle, and Yngve Villanger
Proceedings SODA 2005 - 16th Annual ACM-SIAM Symposium on Discrete Algorithms, Vancouver, Canada, January 2005, pages 907 - 916.
- 2004 Modifying a given elimination ordering to reduce fill
Pinar Heggernes, and Yngve Villanger
PARA 2004, Springer Verlag, LNCS 3732, pages 788 - 797.
- 2003 A vertex incremental approach for dynamically maintaining chordal graphs
Anne Berry, Pinar Heggernes, and Yngve Villanger
ISAAC 2003, Springer Verlag, LNCS 2906, pages 47 - 57.
- 2002 Efficient Implementation of a Minimal Triangulation Algorithm
Pinar Heggernes and Yngve Villanger
ESA 2002, Springer Verlag, LNCS 2461, pages 550-561.