

Curriculum Vitae

Yngve Villanger

Personal data

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Education

PhD in Informatics, University of Bergen, Norway (2006)
Master in Informatics (Cand.Scient), University of Bergen, Norway (2002)
Bachelor in Informatics (Cand.Mag), University of Bergen, Norway (2000)

Professional experience

April 2010 -	Researcher in Informatics, University of Bergen
August 2009- March 2010	Associate professor Bergen University College
2006-February 2010	PostDoc in Informatics, University of Bergen
September-December 07	Associate professor of Informatics, University of Bergen
2006-2007	Directing board of Faculty of Mathematics and Natural Sciences, University of Bergen
2002-2006	Ph.D Student in Informatics, University of Bergen
2000-2002	Software Engineer, Infodoc A/S, Bergen
1997-2000	Technical Support, Infodoc A/S, Bergen

Teaching (main lecturer)

Spring	2010	TOD133 - Advanced Algorithms (HIB)
Autumn	2009	TOD062 - Basic Programming (HIB)
Autumn	2007	INF102 - Algorithms, Data Structures and Programming (UIB)

Conference PC Member

SWAT 2010 Scandinavian Workshop on Algorithm Theory

Journal and conference refereeing

JGAA	Journal of Graph Algorithms and Applications
TCS	Theoretical Computer Science
DAP	Discrete Applied Mathematics
IWPEC	International Workshop on Parameterized and Exact Computation
WG	Workshop on Graph Theoretic Concepts of Computer Science
ESA	European Symposium on Algorithms
CIAC	International Conference on Algorithms and Complexity
LATIN	Latin American Theoretical Informatics Symposium
MFCS	Symposium on Mathematical Foundations of Computer Science
SODA	ACM-SIAM Symposium on Discrete Algorithms

Grants and applications

SCOPE	Exploiting Structure to Cope with Hard Problems. NFR grant 197548/V30, 2010-2014.
Meltzerfondet	travel money Researcher 2007
Meltzerfondet	travel money Ph.D. 2006
Meltzerfondet	travel money Ph.D. 2005
Meltzerfondet	travel money Ph.D. 2004

List of publications

Journal papers

- Faster parameterized algorithms for Minimum Fill-In
Hans Bodlaender, Pinar Heggernes, and Yngve Villanger *Algorithmica*.
To appear.
- Interval Completion is Fixed Parameter Tractable
Yngve Villanger, Pinar Heggernes, Christophe Paul, and Jan Arne Telle
SIAM Journal on Computing. 38-5 (2009), pages 2007-2020.
- 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) (2008), pages 1188-1198.
- Exact algorithms for treewidth and minimum fill-in
Fedor V. Fomin, Ioan Todinca, Dieter Kratsch, and Yngve Villanger
SIAM Journal on Computing. 38-3 (2008), pages 1058-1079.
- A vertex incremental approach for dynamically maintaining chordal graphs
Anne Berry, Pinar Heggernes, and Yngve Villanger
Discrete Mathematics. 306-3 (2006), pages 318-336.

- Lex M versus MCS-M
Yngve Villanger
Discrete Mathematics. 306-3 (2006), pages 393-400.
- 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 (2006), pages 33 - 66.
- 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 (2005), pages 900-913.

Conference papers

- 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.
- Proper Interval Vertex Deletion
Yngve Villanger
IPEC 2010, Springer Verlag, LNCS 6478, Pages 228-238.
- 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.
- A Quartic Kernel for Pathwidth-One Vertex Deletion
Geevarghese Philip, Venkatesh Raman and Yngve Villanger
WG 2010, Springer Verlag, LNCS 6410, Pages 196-207.
- A parameterized algorithm for Chordal Sandwich
Pinar Heggernes, Federico Mancini, Jesper Nederlof, and Yngve Villanger
CIAC 2010, Springer Verlag, LNCS 6078, Pages 120-130.
- Finding Induced Subgraphs via Minimal Triangulations
Fedor V. Fomin and Yngve Villanger
STACS 2010, Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik 2010, Pages 383-394.
- Computing pathwidth faster than 2^n
Karol Suchan and Yngve Villanger
IWPEC 2009, Springer Verlag, LNCS 5917, pages 324-335.
- 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.

- 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.
- Treewidth Computation and Extremal Combinatorics
Fedor V. Fomin and Yngve Villanger
ICALP 2008, Springer Verlag, LNCS 5125, pages 210-221.
- Faster parameterized algorithms for Minimum Fill-In
Hans L. Bodlaender, Pinar Heggernes and Yngve Villanger
ISAAC 2008, Springer Verlag, LNCS 5369, pages 282-293.
- 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.
- Parameterized complexity for domination problems on degenerate graphs
Petr Golovach and Yngve Villanger
WG 2008, Springer Verlag, LNCS 5344, pages 195-205.
- Treewidth computation and extremal combinatorics
Fedor V. Fomin and Yngve Villanger
ICALP 2008, Springer Verlag, LNCS 5125, Pages 210-221.
- 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.
- 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.
- 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.
- Improved exponential-time algorithms for treewidth and minimum fill-in
Yngve Villanger
LATIN 2006, Springer Verlag, LNCS 3887, Pages 800 - 811.
- Minimal interval completions
Pinar Heggernes, Karol Suchan, Ioan Todinca, and Yngve Villanger
ESA 2005, Springer Verlag, LNCS 3669, Pages 403 - 414.

- Computing Minimal Triangulations in $O(n \log n)$ 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.
- Modifying a given elimination ordering to reduce fill
Pinar Heggernes, and Yngve Villanger
PARA 2004, Springer Verlag, LNCS 3732, pages 788 - 797.
- 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.
- Efficient Implementation of a Minimal Triangulation Algorithm
Pinar Heggernes and Yngve Villanger
ESA 2002, Springer Verlag, LNCS 2461, pages 550-561.

Theses

- Thesis submitted for the degree philosophiae doctor (PhD).
New results on minimal triangulations.
Department of Informatics, University of Bergen, Norway, 2006.
- Master's Thesis.
Efficient Minimal Triangulation of Graphs by Using Tree Decompositions.
Department of Informatics, University of Bergen, Norway, 2002.