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## Curriculum

My research is in theoretical computer science, namely *algorithms*. I began in data structures, but in the last few years the focus has been on combinatorial optimisation (“algorithms for hard problems”, if you want). Most of my recent results are in exponential time algorithms.

## Publications

### Modular Counting of Subgraphs: Matchings, Matching-Splittable Graphs, and Paths

Curticapean, R.-C., Dell, H. & Husfeldt, T., 2021, *Proceedings of the 29th Annual European Symposium on Algorithms*. Schloss Dagstuhl--Leibniz-Zentrum für Informatik, Vol. 204. 17 p. 34

### Om frihet är målet behövs en plan för hur ett samhälle utan arbete ska organiseras

Husfeldt, T. & Häggström, O., 19 Nov 2018, In: *Sydsvenska Dagbladet*. p. A3 1 p.

### Counting Connected Subgraphs with Maximum-Degree-Aware Sieving

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2018, *29th International Symposium on Algorithms and Computation, ISAAC 2018, December 16-19, 2018, Jiaoxi, Yilan, Taiwan..* Schloss Dagstuhl--Leibniz-Zentrum für Informatik, Vol. 123. p. 17:1-17:12 12 p. 17. (Leibniz International Proceedings in Informatics).

### Counting Shortest Two Disjoint Paths in Cubic Planar Graphs with an NC Algorithm

Björklund, A. & Husfeldt, T., 2018, *29th International Symposium on Algorithms and Computation (ISAAC 2018)*. Schloss Dagstuhl--Leibniz-Zentrum für Informatik, Vol. 123. p. 19:1-19:13 13 p. (Leibniz International Proceedings in Informatics).

### Extensor-coding

Brand, C., Dell, H. & Husfeldt, T., 2018, *Proceedings of the 50th Annual ACM SIGACT Symposium on Theory of Computing: STOC 2018*. Association for Computing Machinery, p. 151 164 p.

### Valid, scalable, authentic, on-site, digital, individual assessment of programming skills

Husfeldt, T., 2018, *LTHs 10:e Pedagogiska Inspirationskonferens, 6 december 2018*. Lunds Universitet, p. 21 23 p.

### Valhemligheten bör inte vara valfri

Husfeldt, T., 25 May 2015, In: *Dagens Samhälle*.

### Graph Colouring Algorithms

Husfeldt, T., May 2015, *Topics in Chromatic Graph Theory*. Beineke, L. W. & Wilson, R. J. (eds.). Cambridge University Press, p. 277-303 (Encyclopedia of Mathematics and Its Applications; No. 156).

### Exact Graph Coloring Using Inclusion-Exclusion

Björklund, A. & Husfeldt, T., 13 Feb 2015, *Encyclopedia of Algorithms*. Ming-Yang, K. (ed.). Springer, p. 1-2 2 p.

### Monstret i Turings bibliotek

Husfeldt, T., 2015, In: *Filosofisk Tidskrift*. 4

### The Parity of Set Systems under Random Restrictions with Applications to Exponential Time Problems

Björklund, A., Dell, H. & Husfeldt, T., 2015, *Proceedings of the 42nd International Colloquium on Automata, Languages, and Programming, ICALP 2015, (6-10 July 2015, Kyoto, Japan)*. Springer, p. 231-242 12 p. (Lecture Notes in Computer Science, Vol. 9134).

### **Den personlige virkelighed**

Husfeldt, T., 4 Jul 2014, In: Weekendavisen. 27, 2 p.

### **Automata, Languages, and Programming: 41st International Colloquium, ICALP 2014, Copenhagen, Denmark, July 8-11, 2014, Proceedings, Part I**

Esparza, J., Fraigniaud, P. (ed.), Husfeldt, T. (ed.) & Koutsoupias, E. (ed.), 2014, Springer Science+Business Media. 1086 p. (Lecture Notes in Computer Science).

### **Automata, Languages, and Programming: 41st International Colloquium, ICALP 2014, Copenhagen, Denmark, July 8-11, 2014, Proceedings, Part II**

Esparza, J. (ed.), Fraigniaud, P., Husfeldt, T. & Koutsoupias, E., 2014, Springer Science+Business Media. 619 p. (Lecture Notes in Computer Science).

### **Exponential Time Complexity of the Permanent and the Tutte Polynomial**

Dell, H., Husfeldt, T., Marx, D., Taslaman, N. S. & Wahlén, M., 2014, In: A C M Transactions on Algorithms. 10, 4, p. 21:1-21:32 32 p., 21.

### **Preface**

Esparza, J., Fraigniaud, P., Husfeldt, T. & Koutsoupias, E., 2014, *Automata, Languages, and Programming: 41st International Colloquium, ICALP 2014, Copenhagen, Denmark, July 8-11, 2014, Proceedings, Part I*. Springer, Vol. 8572. p. 5-6 2 p. (Lecture Notes in Computer Science, Vol. 8572).

### **Shortest Two Disjoint Paths in Polynomial Time**

Björklund, A. & Husfeldt, T., 2014, *Automata, Languages, and Programming: 41st International Colloquium, ICALP 2014, Copenhagen, Denmark, July 8-11, 2014, Proceedings, Part I*. 12 p. (Lecture Notes in Computer Science, Vol. 8572).

### **Det vore fullt möjligt för politiken att främja sådana tekniker, istället för att sabotera dem**

Husfeldt, T., Larsson, J. & Pagh, R., 14 Nov 2013, In: Sydsvenska Dagbladet Snällposten.

### **E-rösta är en dålig idé**

Husfeldt, T., 28 Apr 2013, In: Sydsvenska Dagbladet Snällposten.

### **Exponential Algorithms: Algorithms and Complexity Beyond Polynomial Time: Dagstuhl Seminar 13331**

Husfeldt, T., Paturi, R., Sorkin, G. B. & Williams, R., 2013, In: Dagstuhl Seminar Proceedings. 3, 8, p. 40-72 33 p.

### **The Parity of Directed Hamiltonian Cycles**

Björklund, A. & Husfeldt, T., 2013, In: Symposium on Foundations of Computer Science. Annual Proceedings. p. 727-735

### **The traveling salesman problem in bounded degree graphs**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2012, In: A C M Transactions on Algorithms. 8, 2

### **Covering and packing in linear space**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2011, In: Information Processing Letters. 111, 21-22, p. 1033 3 p.

### **Invitation to algorithmic uses of inclusion–exclusion**

Husfeldt, T., 2011, In: Lecture Notes in Computer Science. II, p. 42-59 17 p.

### **Covering and packing in linear space**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2010, *37th International Colloquium on Automata, Languages and Programming (ICALP 2010), Bordeaux, France, July 6-10, 2010*. Springer, Vol. 6198. p. 727-737 (Lecture Notes in Computer Science).

### **Evaluation of permanents in rings and semirings**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2010, In: Information Processing Letters. 110, p. 867–870

### **Exponential time complexity of the permanent and the Tutte polynomial**

Dell, H., Husfeldt, T. & Wahlén, M., 2010, *37th International Colloquium on Automata, Languages and Programming (ICALP 2010), Bordeaux, France, July 6-10, 2010*. Springer, Vol. 6198. p. 426-437 (Lecture Notes in Computer Science).

### **The exponential time complexity of computing the probability that a graph is connected**

Husfeldt, T. & Taslamani, N. S., 2010, *5th International Symposium on Parameterized and Exact Computation (IPEC 2010), December 13–15, 2010, Chennai, India*. Springer, (Lecture Notes in Computer Science).

### **Trimmed Moebius Inversion and Graphs of Bounded Degree**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2010, In: Theory of Computing Systems. 47, 3, p. 637-654

### **Counting paths and packings in halves**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2009, *17th Annual European Symposium on Algorithms*. Fiat, A. & Sanders, P. (eds.). Springer, Vol. 5757. p. 578–586 (Lecture Notes in Computer Science, Vol. 5757).

### **Set partitioning via inclusion–exclusion**

Björklund, A., Husfeldt, T. & Koivisto, M., 2009, In: SIAM Journal on Computing. 39, 2, p. 546-563

### **Computing the Tutte Polynomial in Vertex-Exponential Time**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2008, *2008 IEEE 49th Annual IEEE Symposium on Foundations of Computer Science (FOCS)*. IEEE Press, p. 677-686

### **Exact algorithms for exact satisfiability and number of perfect matchings**

Björklund, A. & Husfeldt, T., 2008, In: Algorithmica. 52, 2, p. 226-249

### **The Travelling Salesman Problem in bounded degree graphs**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2008, *LNCS Automata, Languages and Programming: 35th International Colloquium, ICALP 2008, Reykjavik, Iceland, July 7-11, 2008, Proceedings, Part I*. Springer, p. 198–209 (Lecture Notes in Computer Science; No. 5125).

### **Trimmed Moebius inversion and graphs of bounded degree**

Björklund, A., Husfeldt, T., Kaski, P. & Koivisto, M., 2008, *Proceedings of the 25th International Symposium on Theoretical Aspects of Computer Science Bordeaux, France, 2008*. Albers, S. & Weil, P. (eds.). Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik GmbH, p. 85–96

## **Activities**

### **The mathematics in The Hilbert Heartbreak Hotel**

Thore Husfeldt (Lecturer)  
28 Mar 2015

## **Projects**

### **BARC - Basic Algorithms Research Copenhagen**

Pagh, R., Husfeldt, T. & Wyke, L.  
01/09/2017 → 31/08/2024