

# CURRICULUM VITAE

BALÁZS KESZEGH

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## PERSONAL DETAILS

Gender: Male

Citizenship: Slovak

Date and place of birth: 16th of December, 1981, Komárno, Slovak Republic

Home address: Jókai str. 24, Komárno, Slovak Republic

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## EMPLOYMENT

2010 Sept. – Alfréd Rényi Institute of Mathematics, Young Researcher

2009 Sept. – 2010 Aug. Ecole Polytechnique Fédérale de Lausanne (EPFL),  
Department of Combinatorial Geometry, Postdoctoral Position

2008 Sept. - 2009 Aug. Alfréd Rényi Institute of Mathematics, Young Researcher

2008 Sept. – Teaching Assistant, Introduction to Computer Science, Budapest University of Technology and Economics

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## EDUCATION

2005–2009 Central European University, Budapest, Department of Mathematics and its Applications, Ph.D. student  
PhD Dissertation: Combinatorial and computational problems about points in the plane (supervisors: E. Györi and G. Tardos), 2009 January (Summa Cum Laude)

2000–2005 Eötvös Loránd University, Budapest, Faculty of Science, Mathematician Major  
Master's Thesis: Forbidden submatrices in 0-1 matrices (supervisor: G. Tardos), 2005

1996–2000 Fazekas Mihály Grammar School, Budapest

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## RESEARCH VISITS

2007 Sept, 10 weeks Theoretical Computer Science Workgroup, Technische Universität and Freie Universität, Berlin

2006 Sept, 12 weeks Computer Science Department, Simon Fraser University,  
Vancouver

2004 Nov, 2 weeks Ecole Normale Supérieure, Paris

2003 Nov, 2 weeks Ecole Normale Supérieure, Paris

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#### PRIZES AND COMPETITIONS

2010	Grünwald Géza Prize of the Bolyai Society
2003	Middle-European Maths contest in Ostrava, 11th place
2000	International Mathematical Olympiad, silver medal
2000	Hungarian National Mathematical Contest, 3rd place
2000	Kürshák József Mathematical Contest, 2nd place
1999	International Mathematical Olympiad, silver medal
1999	Hungarian National Mathematical Contest, 8th place

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#### PUBLICATIONS

1. Saturating Sperner families (with D. Gerbner, N. Lemons, C. Palmer, B. Patkós and D. Pálvölgyi), Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications Proceedings (2011), 341–350.
2. Octants are Cover Decomposable (with D. Pálvölgyi), Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications Proceedings (2011), 217–226.; *Discrete and Computational Geometry*, accepted
3. Path-search in a pyramid and in other graphs (with D. Gerbner), ZiF Workshop Search Methodologies II, Bielefeld (2010); *Journal of Statistical Theory and Practice*, accepted
4. Drawing planar graphs of bounded degree with few slopes (with J. Pach and D. Pálvölgyi), *Graph Drawing 2010, Lecture Notes in Computer Science* **6502**, Springer (2011), 293–304.
5. Search with density tests (with D. Gerbner, D. Pálvölgyi and G. Wiener), Coimbra Meeting on 0-1 Matrix Theory and Related, Coimbra (2010); ZiF Workshop Search Methodologies II, Bielefeld (2010)
6. Drawing Graphs with Orthogonal Crossings (with K. Arikushi, R. Fulek, F. Morić and Cs. D. Tóth), *36th International Workshop on Graph Theoretic Concepts in Computer Science, Zarós* (2010), *Lecture Notes in Computer Science* **6410**, Springer (2010), 135–146.

7. Generalizations of the Tree Packing Conjecture (with D. Gerbner, C. Palmer), 8th French Combinatorial Conference, Paris (2010); *Discussiones Mathematicae Graph Theory*, accepted
8. Unique-maximum and conflict-free colorings for hypergraphs and tree graphs (with P. Cheilaris, D. Pálvölgyi), <http://arxiv.org/abs/1002.4210>
9. On Polygons Excluding Point Sets (with R. Fulek, F. Moric, I. Uljarević), *The 22nd Canadian Conference on Computational Geometry (CCCG10)* Proceedings (2010), 273–276.
10. Polychromatic colorings of arbitrary rectangular partitions (with D. Gerbner, N. Lemons, C. Palmer, B. Patkós and D. Pálvölgyi), *6th Japanese-Hungarian Symposium on Discrete Mathematics and Its Applications* (2009); *Discrete Mathematics*, **310(1)**, Elsevier (2010), 21–30.
11. Cubic graphs have bounded slope parameter (with J. Pach, D. Pálvölgyi, and G. Tóth), *Graph Drawing 2008; Journal of Graph Algorithms and Applications* **14(1)**, (2010), 5–17.
12. Box-respecting Colorings of  $n$ -dimensional Guillotine-Partitions, *Discrete Mathematics* **311(8-9)**, Elsevier (2011), 756–760.  
Conference version: Polychromatic colorings of  $n$ -dimensional guillotine-partitions, *The 14th Annual International Computing and Combinatorics Conference (COCOON08)* Proceedings, 110–118.
13. On linear forbidden submatrices, *Journal of Combinatorial Theory, Series A*, **116**, Elsevier (2009), 232–241.
14. Coloring half-planes and bottomless rectangles, *Computational Geometry Theory and Applications*, accepted  
Conference version: Weak conflict free colorings of point sets and simple regions, *The 19th Canadian Conference on Computational Geometry (CCCG07)*, Proceedings (2007), 97–100.
15. An improved upper bound on the reflexivity of point sets (with E. Ackerman and O. Aichholzer), *The 19th Canadian Conference on Computational Geometry (CCCG07)*, Proceedings (2007), 29–32.; *Computational Geometry: Theory and Applications* **42(3)**, Elsevier (2009), 241–249.
16. Drawing cubic graphs with at most five slopes (with J. Pach, D. Pálvölgyi, and G. Tóth), *Graph Drawing 2006; Lecture Notes in Computer Science* **4372**, Springer (2007), 114–125.; *Computational Geometry: Theory and Applications* **40(2)**, Elsevier (2008), 138–147.

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## TALKS (CONFERENCES ETC.)

- Octants are cover decomposable:
  - European Conference on Combinatorics, Graph Theory and Applications (EuroComb), Budapest, August 29 - September 2, 2011
  - The 7th Hungarian-Japanese Symposium on Discrete Mathematics and Its Applications , Kyoto, May 31 - June 3, 2011

- Unique-maximum and conflict-free coloring for hypergraphs and tree graphs:
  - The 7th Hungarian-Japanese Symposium on Discrete Mathematics and Its Applications , Kyoto, May 31 - June 3, 2011
- Path-search in a pyramid and in other graphs:
  - ZiF Workshop Search Methodologies II, Bielefeld, October 25-29, 2010
- Generalizations of the Tree Packing Conjecture:
  - 8th French Combinatorial Conference, Paris, June 28 - July 2, 2010
- Search with density tests:
  - Coimbra Meeting on 0-1 Matrix Theory and Related, Coimbra, June 17-19, 2010
- Mini course on conflict-free colorings:
  - Freie Universität, Berlin, June 3-6, 2008
- Polychromatic colorings of  $n$ -dimensional guillotine-partitions:
  - The 14th Annual International Computing and Combinatorics Conference, Dalian, June 27-29, 2008
- Weak conflict free colorings of point sets and simple regions:
  - Geometry Fest, Budapest, June 11-15, 2007
  - The 19th Canadian Conference on Computational Geometry (CCCG), Ottawa, August 20-22, 2007
- An improved upper bound on the reflexivity of point sets:
  - The 19th Canadian Conference on Computational Geometry (CCCG), Ottawa, August 20-22, 2007
- On linear forbidden submatrices:
  - COMBSTRU semi-final workshop, Prague, March 10-12, 2006
  - Conference on Probabilistic Combinatorics & Algorithms, DIMACS Center, Rutgers, April 24-25, 2006

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#### SOME OTHER CONFERENCE AND WORKSHOP PARTICIPATIONS

- A Conference in honor of the 70th birthday of Gyula Katona, Budapest, 2011
- Paul Turán Memorial Conference, Budapest, 2011
- 1st, 2nd, 3rd Emléktábla Workshop, Hungary, 2010-2011
- Conference on Geometric Graph Theory, Lausanne, 2010
- The Mathematics of Vera Sós, Budapest, 2010
- A Conference in honor of the 70th birthday of Endre Szemerédi, Budapest, 2010
- 3ème cycle romand de Recherche Opérationnelle, Zinal, 2010
- EuroComb, Bordeaux, 2009

- 3ème cycle romand de Recherche Opérationnelle, Zinal, 2009
- Fete of Combinatorics and Computer Science, Keszthely, 2008
- Building Bridges, Budapest, 2008
- International Workshop on Graph-Theoretic Concepts in Computer Science, Dornburg near Jena, 2007
- Advanced Course on Analytic and Probabilistic Techniques in Combinatorics, Barcelona, 2007
- Graph Drawing, Karlsruhe, 2006
- EuroComb, Berlin, 2005

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#### TOPICS OF INTEREST

Extremal Combinatorics, Combinatorial and Computational Geometry, Graph Theory