

**Ao. Univ.-Prof. Dr. Alois Panholzer**  
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# Curriculum Vitæ

## Personal

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Name: Alois Panholzer  
Date of birth: 8th March 1971  
Place of birth: Linz  
Marital status: married, one daughter  
Citizenship: Austria

## Education

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1977–1985: Elementary and Secondary School in St. Martin/Mkr.  
1985–1991: Höhere Technische Lehranstalt Wels for “Chemical Engineering”.  
June 1991: Matura with distinction.  
1991–1996: Studies of “Technische Mathematik” at the Vienna University of Technology.  
January 1996: Master’s degree (Dipl.-Ing.) with distinction.  
1996–1997: PhD studies at the Vienna University of Technology.  
Advisor: Prof. Helmut Prodinger (now University of Stellenbosch, South Africa).  
Title of the PhD thesis: “Untersuchungen zur durchschnittlichen Gestalt gewisser Baumfamilien. Mit besonderer Berücksichtigung von Anwendungen in der Informatik.”.  
December 1997: PhD degree (Dr. techn.) with distinction.

## Occupational career

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01/1998–01/1999: Research assistant in the FWF-funded research project “Mathematical analysis of sorting and searching algorithms”.  
Project director: Helmut Prodinger.  
01/1999–01/2000: Assistant professor (Vertragsassistent) at the Institut für Mathematik at the University of Innsbruck.  
01/2000–02/2003: Assistant professor (Universitätsassistent) at the Institut für Algebra und Computermathematik at the Vienna University of Technology.

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## Occupational career (continued)

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- November 2002: Habilitation (Univ.-Doz.) for “Discrete Mathematics” at the Vienna University of Technology.
- Since 03/2003: Associate professor (Ao. Univ.-Prof.) at the Institute of Discrete Mathematics and Geometry (former: Institut für Algebra und Computermathematik) at the Vienna University of Technology.
- February 2010: Invited professor at the Laboratoire d’Informatique de Paris-Nord at the Université Paris XIII.

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## Award

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- 1998: Studienpreis 1998 of the Austrian Mathematical Society (ÖMG) awarded for the PhD thesis.
- 2009: Award (Förderungspreis) of the Austrian Mathematical Society (ÖMG).

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## Projects

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- 2010–2011: Project member of the Austrian Exchange Service ÖAD funded French-Austrian project “Random logical trees and related structures”.  
Project director: Bernhard Gittenberger.
- 2008–2009: **Project director** of the Austrian Exchange Service ÖAD funded Spanish-Austrian “Acciones Integradas”-project “Mathematical analysis of recursive algorithms and recursive structures”.  
**Granted research budget (Austrian Part):** 6.000 Euro for research stays at the Universitat Politècnica de Catalunya, Barcelona.
- 2006–2011 **Project director** of the Austrian Science Fund FWF funded project “Analysis of data structures and tree-like structures”.  
Part of the FWF funded Austrian research network “Analytic combinatorics and probabilistic number theory”.  
**Granted research budget:** First funding period (2006–2008): 139.600 Euro,  
Second funding period (2009–2011): 191.900 Euro.
- 2006–2009 Project member of the EU funded project “Network models, governance and R&D collaboration networks”.  
Project director: Michael Drmota.
- 2005–2006: **Project director** of the Austrian Exchange Service ÖAD funded French-Austrian “Amadée”-project “Combinatorial analysis of data structures”.  
**Granted research budget (Austrian part):** 5.600 Euro for research stays at the Université Paris XIII.
- 2005: **Project director** of the Austrian Science Fund FWF funded project “Combinatorial analysis of data structures and tree-like structures”.  
**Granted research budget:** 89.500 Euro.
- 2003–2004: Project member of the Austrian Exchange Service ÖAD funded Hungarian-Austrian project “Applications of trees in computer science”.  
Project director: Werner Kuich.
- 2001-2003: Project member of the reserach centre (Forschungsschwerpunkt) “Analysis of Algorithms” at the Vienna University of Technology.  
Project director: Michael Drmota.

## Projects (continued)

- 2001–2002: Project member of the Austrian Exchange Service ÖAD funded French-Austrian “Amadée”-project “Probabilistic analysis of data structures”.  
Project director: Michael Drmota.
- 1998–1999: Project member of the Austrian Exchange Service ÖAD funded Spanish-Austrian “Acciones Integradas”-project “Mathematical analysis of searching and sorting algorithms”.  
Project director: Helmut Prodinger.
- 1998: Project member of the Austrian Exchange Service ÖAD funded French-Austrian “Amadée”-project “Combinatorics and symbolic computation”.  
Project director: Helmut Prodinger.

## Research stays

- 08/2010: Academia Sinica, Institute of Statistical Science, Taipei, Taiwan (2 weeks).
- 04/2010: Universitat Politècnica de Catalunya, Departament de Llenguatges i Sistemes Informàtics, Barcelona, Spain (1 week).
- 02/2010: Université Paris XIII, Institut Galilée, Paris, France (1 month).
- 11/2009: Universitat Politècnica de Catalunya, Departament de Llenguatges i Sistemes Informàtics, Barcelona, Spain (1 week).
- 08/2008: Academia Sinica, Institute of Statistical Science, Taipei, Taiwan (2 weeks).
- 03/2008: University of Stellenbosch, Stellenbosch, South Africa (2 weeks).
- 05/2007: Universitat Politècnica de Catalunya, Departament de Llenguatges i Sistemes Informàtics, Barcelona, Spain (1 week).
- 08/2006: Academia Sinica, Institute of Statistical Science, Taipei, Taiwan (2 weeks).
- 04/2006: Université Paris XIII, Institut Galilée, Paris, France (1 week).
- 05/2005: Université Paris XIII, Institut Galilée, Paris, France (1 week).
- 04/2004: University of Szeged, Department of Computer Science, Szeged, Hungary (1 week).
- 02/2004: University of the Witwatersrand, Johannesburg, South Africa (2 weeks).
- 07/2003: University of Szeged, Department of Computer Science, Szeged, Hungary (1 week).
- 08/2002: University of the Witwatersrand, Johannesburg, South Africa (1 month).
- 05/2002: Université de Versailles Saint-Quentin en Yvelines, Laboratoire LAMA, Versailles, France (1 week).
- 04/2001: Université de Versailles Saint-Quentin en Yvelines, Laboratoire LAMA, Versailles, France (2 weeks).
- 08/1999: University of the Witwatersrand, Johannesburg, South Africa (1 month).
- 04/1998: INRIA Rocquencourt, Le Chesnay Cedex, France (1 week).
- 02/1998: Universitat Politècnica de Catalunya, Departament de Llenguatges i Sistemes Informàtics, Barcelona, Spain (1 week).

### Journal papers:

- [54] Svante Janson, Markus Kuba and Alois Panholzer. Generalized Stirling permutations, families of increasing trees and urn models. accepted for publication in *Journal of Combinatorial Theory, Series A*.
- [53] Markus Kuba and Alois Panholzer. A combinatorial approach to the analysis of bucket recursive trees and variants. *Theoretical Computer Science*, 411:3255–3273, 2010.
- [52] Markus Kuba and Alois Panholzer. Enumeration results for alternating tree families. *European Journal of Combinatorics*, 31:1751–1780, 2010.
- [51] Markus Kuba and Alois Panholzer. On the area under lattice paths associated with triangular diminishing urn models. *Advances in Applied Mathematics*, 44:329–358, 2010.
- [50] Markus Kuba and Alois Panholzer. On the distribution of distances between specified nodes in increasing trees. *Discrete Applied Mathematics*, 158:489–506, 2010.
- [49] Alois Panholzer and Helmut Prodinger. A short proof of a series evaluation in terms of harmonic numbers. *Integers: Electronic Journal of Combinatorial Number Theory*, 9:491–496 (Paper A38), 2009.
- [48] Michael Drmota, Bernhard Gittenberger, Alois Panholzer, Helmut Prodinger and Mark Ward. On the shape of the fringe of various types of random trees. *Mathematical Methods in the Applied Sciences*, 32(10):1207–1245, 2009.
- [47] Cyril Banderier, Markus Kuba and Alois Panholzer. Analysis of three graph parameters for random trees. *Random Structures & Algorithms*, 35:42–69, 2009.
- [46] Markus Kuba, Alois Panholzer and Helmut Prodinger. Lattice paths, sampling without replacement, and limiting distributions. *Electronic Journal of Combinatorics*, 16(1):paper R67, 2009.
- [45] Markus Kuba and Alois Panholzer. A combinatorial approach for analyzing the number of descendants in increasing trees and related parameters. *Quaestiones Mathematicae*, 32:91–114, 2009.
- [44] Alois Panholzer. Left and right length of paths in binary trees or on a question of Knuth. *Annals of Combinatorics*, 12:479–492, 2009.
- [43] Alois Panholzer and Helmut Prodinger. Bijections between certain families of labelled and unlabelled  $d$ -ary trees. *Applicable Analysis and Discrete Mathematics*, 3:123–136, 2009.
- [42] Markus Kuba and Alois Panholzer. Isolating nodes in recursive trees. *Aequationes Mathematicae*, 76:258–280, 2008.
- [41] Alois Panholzer. Analysis of some parameters for random nodes in priority trees. *Discrete Mathematics and Theoretical Computer Science*, 10(2):1–38, 2008.
- [40] Qunqiang Feng, Hosam Mahmoud and Alois Panholzer. Limit laws for the Randić' index of random binary tree models. *Annals of the Institute of Statistical Mathematics*, 60:319–343, 2008.
- [39] Markus Kuba and Alois Panholzer. Isolating a leaf in rooted trees via random cuttings. *Annals of Combinatorics*, 12:81–99, 2008.
- [38] Alois Panholzer. A distributional study of the path-edge covering numbers for random trees. *Discrete Applied Mathematics*, 156:1036–1052, 2008.
- [37] Qunqiang Feng, Hosam Mahmoud and Alois Panholzer. Phase changes in subtree varieties in random recursive and binary search trees. *SIAM Journal on Discrete Mathematics*, 22:160–184, 2008.
- [36] Markus Kuba and Alois Panholzer. On edge-weighted recursive trees and inversions in random permutations. *Discrete Mathematics*, 308:529–540, 2008.

## Scientific publications (continued)

- [35] Markus Kuba and Alois Panholzer. On weighted path lengths and distances in increasing trees. *Probability in the Engineering and Informational Sciences*, 21:419–433, 2007.
- [34] Alois Panholzer and Helmut Prodinger. The level of nodes in increasing trees revisited. *Random Structures & Algorithms*, 31:203–226, 2007.
- [33] Markus Kuba and Alois Panholzer. On the degree distribution of the nodes in increasing trees. *Journal of Combinatorial Theory, Series A*, 114:597–618, 2007.
- [32] Markus Kuba and Alois Panholzer. The left-right-imbalance of binary search trees. *Theoretical Computer Science*, 370:265–278, 2007.
- [31] James Allen Fill, Nevin Kapur and Alois Panholzer. Destruction of very simple trees. *Algorithmica*, 46:345–366, 2006.
- [30] Alois Panholzer. Cutting down very simple trees. *Quaestiones Mathematicae*, 29:211–227, 2006.
- [29] Markus Kuba and Alois Panholzer. Descendants in increasing trees. *Electronic Journal of Combinatorics*, 13(1):#R8, 2006. (14 pp.)
- [28] Alois Panholzer and Helmut Prodinger. Computer-free evaluation of a double infinite sum via Euler sums. *Seminaire Lotharingien de Combinatoire*, B55a, 2005.
- [27] Alois Panholzer. Gröbner bases and the defining polynomial of a context-free grammar generating function. *Journal of Automata, Languages and Combinatorics*, 10:79–97, 2005.
- [26] Alois Panholzer. The distribution of the path edge-covering numbers for random trees. *Electronic Notes in Discrete Mathematics*, 19:163–169, 2005.
- [25] Alois Panholzer. The climbing depth of random trees. *Random Structures & Algorithms*, 26:84–109, 2005.
- [24] Alois Panholzer, Helmut Prodinger and Marko Riedel. Measuring post-quickselect disorder. *Journal of the Iranian Statistical Society*, 3:219–249, 2004.
- [23] Alois Panholzer, Helmut Prodinger and Marko Riedel. Permuting in place: Analysis of two stopping rules. *Journal of Algorithms*, 51:170–184, 2004.
- [22] Alois Panholzer and Helmut Prodinger. Analysis of some statistics for increasing tree families. *Discrete Mathematics and Theoretical Computer Science*, 6:437–460, 2004.
- [21] Alois Panholzer and Helmut Prodinger. Spanning tree size in Random Binary Search Trees. *The Annals of Applied Probability*, 14:718–733, 2004.
- [20] Alois Panholzer. The distribution of the size of the ancestor-tree and of the induced spanning subtree for random trees. *Random Structures & Algorithms*, 25:179–207, 2004.
- [19] Alois Panholzer. Distribution of the Steiner distance in generalized  $M$ -ary search trees. *Combinatorics, Probability and Computing*, 13:717–733, 2004.
- [18] Kate Morris, Alois Panholzer and Helmut Prodinger. Some parameters in heap ordered trees. *Combinatorics, Probability and Computing*, 13:677–696, 2004.
- [17] Alois Panholzer. On generalized Fibonacci Permutations. *Journal of Information & Optimization Sciences*, 24:591–610, 2003.
- [16] Alois Panholzer. The height distribution of non-crossing trees. *Ars Combinatoria*, 69:19–32, 2003.
- [15] Alois Panholzer. Analysis of Multiple Quickselect variants. *Theoretical Computer Science*, 302:45–91, 2003.

## Scientific publications (continued)

- [14] Alois Panholzer and Helmut Prodinger. Bijections for ternary trees and non-crossing trees. *Discrete Mathematics*, 250:181–195, 2002.
- [13] Alois Panholzer and Helmut Prodinger. Binary search tree recursions with harmonic toll functions. *Journal of Computational and Applied Mathematics*, 142:211–225, 2002.
- [12] Alois Panholzer and Helmut Prodinger. A generating functions proof of a curious identity. *Integers: Electronic Journal of Combinatorial Number Theory*, 2: paper A06, 2002.
- [11] Alois Panholzer and Helmut Prodinger. Moments of level numbers of leaves in binary trees. *Journal of Statistical Planning and Inference*, 101:267–279, 2002.
- [10] Jean-Francoir Marckert and Alois Panholzer. Noncrossing trees are almost conditioned Galton-Watson trees. *Random Structures & Algorithms*, 20:115–125, 2002.
- [9] Alois Panholzer and Helmut Prodinger. Kirkman’s hypothesis revisited. *Integers: Electronic Journal of Combinatorial Number Theory*, 1: paper A05, 2001.
- [8] Conrado Martinez, Alois Panholzer and Helmut Prodinger. Partial match queries in relaxed multidimensional search trees. *Algorithmica*, 29:181–204, 2001.
- [7] Alois Panholzer and Helmut Prodinger. Two proofs of Filipponi’s formula for Lucas numbers of odd index. *The Fibonacci Quarterly*, 38:165–166, 2000.
- [6] Alois Panholzer and Helmut Prodinger. An analytic approach for the analysis of rotations in fringe-balanced binary search trees. *Annals of Combinatorics*, 2:173–184, 1998.
- [5] Alois Panholzer and Helmut Prodinger. A generating functions approach for the analysis of grand averages for multiple quickselect. *Random Structures & Algorithms*, 13:189–209, 1998.
- [4] Alois Panholzer and Helmut Prodinger. Average case-analysis of priority trees: A structure for priority queue administration. *Algorithmica*, 22:600–630, 1998.
- [3] Alois Panholzer and Helmut Prodinger. Towards a more precise analysis of an algorithm to generate binary trees: A tutorial. *The Computer Journal*, 41:201–204, 1998.
- [2] Conrado Martinez, Alois Panholzer and Helmut Prodinger. On the Number of Descendants and Ascendants in Random Search Trees. *Electronic Journal of Combinatorics*, 5(1):#R20, 1998. (26 pp.)
- [1] Alois Panholzer and Helmut Prodinger. Descendants and ascendants in binary trees. *Discrete Mathematics and Theoretical Computer Science*, 1:247–266, 1997.

### Conference proceedings:

- [P14] Alois Panholzer and Georg Seitz. Ordered increasing  $k$ -trees: introduction and analysis of a preferential attachment network model. *Discrete Mathematics and Theoretical Computer Science*, in: “Proceedings of the 21st International Meeting on Probabilistic, Combinatorial, and Asymptotic Methods in the Analysis of Algorithms (AofA’10)”, Proceedings AM, 549–564, 2010.
- [P13] Markus Kuba and Alois Panholzer. Enumerating alternating tree families. *Discrete Mathematics and Theoretical Computer Science*, in: “Proceedings of the 20th Annual International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2008)”, Proceedings AJ, 105–116, 2008.
- [P12] Michael Drmota, Bernhard Gittenberger and Alois Panholzer. The degree distribution of thickened trees. *Discrete Mathematics and Theoretical Computer Science*, in: “Proceedings of the Fifth Colloquium on Mathematics and Computer Science”, Proceedings AI, 149–162, 2008.

## Scientific publications (continued)

- [P11] Conrado Martinez, Alois Panholzer and Helmut Prodinger. Generating random derangements. in: “Proceedings of the Tenth ALENEX workshop and the Fifth ANALCO workshop”, 234–240, SIAM, Philadelphia, 2008.
- [P10] Markus Kuba and Alois Panholzer. Analysis of the total costs for variants of the Union-Find algorithm. *Discrete Mathematics and Theoretical Computer Science*, in: “2007 International Conference on the Analysis of Algorithms”, Proceedings AH, 259–268, 2007.
- [P9] Markus Kuba and Alois Panholzer. Limit laws for a class of diminishing urn models. *Discrete Mathematics and Theoretical Computer Science*, in: “2007 International Conference on the Analysis of Algorithms”, Proceedings AH, 341–352, 2007.
- [P8] Hsien-Kuei Hwang, Markus Kuba and Alois Panholzer. Analysis of some exactly solvable diminishing urn models. in: “The 19th International Conference on Formal Power Series and Algebraic Combinatorics”, Nankai University, Tianjin, 2007. <http://www.fpsac.cn/PDF-Proceedings/Posters/43.pdf>
- [P7] Markus Kuba and Alois Panholzer. Analysis of insertion costs in priority trees. in: “*Proceedings of the Ninth Workshop on Algorithm Engineering and Experiments and the Fourth Workshop on Analytic Algorithmics and Combinatorics*”, 175–182, SIAM, Philadelphia, 2007.
- [P6] Alois Panholzer. Left and right length of paths in binary trees. (Extended abstract). *Discrete Mathematics and Theoretical Computer Science*, in: “Proceedings of the Fourth Colloquium on Mathematics and Computer Science”, Proceedings AG, 415–418, 2006.
- [P5] Markus Kuba and Alois Panholzer. Analysis of label-based parameters in increasing trees. *Discrete Mathematics and Theoretical Computer Science*, in: “Proceedings of the Fourth Colloquium on Mathematics and Computer Science”, Proceedings AG, 321–330, 2006.
- [P4] Bernhard Gittenberger and Alois Panholzer. Some results for monotonically labelled simply generated trees. *Discrete Mathematics and Theoretical Computer Science*, in: “2005 International Conference on the Analysis of Algorithms”, Proceedings AD, 173–180, 2005.
- [P3] Alois Panholzer. Destruction of Recursive Trees. in: “*Proceedings of the Third Colloquium on Mathematics and Computer Science*”, 267–280, Birkhäuser, Basel, 2004.
- [P2] Alois Panholzer. Analysis of some tree statistics. in: “*Proceedings of the Seventh Iranian Statistical Conference*”, 259–288, Allameh Tabatabaie University, Teheran, 2004.
- [P1] Alois Panholzer. Non-crossing trees revisited: cutting down and spanning subtrees. *Discrete Mathematics and Theoretical Computer Science*, in “Discrete Random Walks, DRW’03”, Proceedings AC, 265–276, 2003.

### Survey article:

- [Y1] Alois Panholzer. *Algorithms, random tree models and combinatorial objects*. *Internationale Mathematische Nachrichten*, 214:1–16, 2010.

### Research monograph:

- [M1] Alois Panholzer. *Untersuchungen zur durchschnittlichen Gestalt gewisser Baumfamilien. Mit besonderer Berücksichtigung von Anwendungen in der Informatik*. Dissertationen der Technischen Universität Wien, Band 84, Österreichischer Kunst und Kulturverlag, Wien, 1999. ISBN: 3-85437-176-4. ZBl.: 0923 68097

### Book:

- [B1] Michael Drmota, Bernhard Gittenberger, Günther Karigl and Alois Panholzer, *Mathematik für Informatik*. Heldermann, Lemgo, 2007. ISBN 978-3-88538-117-4 (appeared meanwhile in the third edition)

## Scientific talks

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“Permutation statistics for generalised Stirling permutations” at “Kolkom 2010: 29th Colloquium on Combinatorics”, Saarbrücken, Germany, 13. 11. 2010.

“Analyzing generalized Stirling permutations via relations to families of increasing trees and urn models” at Academia Sinica, Taipei, Taiwan, 13. 8. 2010.

“Analyzing generalized Stirling permutations via relations to families of increasing trees and urn models” at the conference “International Workshop on Applied Probability (IWAP 2010)”, Madrid, Spain, 8. 7. 2010.

“Analysis of scale-free network models based on  $k$ -trees” at the conference “SIAM Conference on Discrete Mathematics (DM 10)”, Austin, USA, 17. 6. 2010.

“Some applications of the method of moments in the analysis of algorithms” at Université Paris XIII, Paris, France, 16. 2. 2010.

“Exact and asymptotic enumeration results for combinatorial objects” at Université Paris XIII, Paris, France, 9. 2. 2010.

“Combinatorial models based on thickened tree structures” at the conference “Workshop: Evaluating R & D Collaboration Networks in Europe”, Bielefeld, Germany, 21. 10. 2009.

“Exact and asymptotic enumeration results for combinatorial objects” at the conference “17. ÖMG-DMV Kongress”, Graz, Austria, 23. 9. 2009.

“Analysis of label-dependent parameters in increasing trees and generalizations” at the conference “RS & A 2009: The 14th International Conference on Random Structures and Algorithms”, Poznan, Poland, 6. 8. 2009.

“Analysis of label-dependent parameters in increasing trees and generalizations” at the conference “CanaDAM 2009: 2nd Canadian Discrete and Algorithmic Mathematics Conference”, Montreal, Canada, 26. 5. 2009.

“Asymptotic results for the number of unsuccessful parkers in a one-way street” at the conference “Discrete Mathematics Days 2009”, Ottawa, Canada, 22. 5. 2009.

“Asymptotic results for the number of unsuccessful parkers in a one-way street” at the conference “Kolkom '08: 27th Colloquium on Combinatorics”, Magdeburg, Germany, 14. 11. 2008.

“Combinatorial analysis of data structures and tree-like structures” at Fonds zur Förderung der wissenschaftlichen Forschung, Wien, Austria, 6. 11. 2008.

“On a discrete parking problem” at Academia Sinica, Taipei, Taiwan, 18. 8. 2008.

“Enumerating alternating tree families” at the conference “FPSAC 2008: 20th International Conference on Formal Power Series and Algebraic Combinatorics”, Valparaiso – Viña del Mar, Chile, 23. 6. 2008.

“On a discrete parking problem” at the conference “AofA '08: 2008 International Conference on the Analysis of Algorithms”, Maresias, Brazil, 17. 4. 2008.

“A study of two combinatorial problems” at the University of Stellenbosch, South Africa, 25. 3. 2008.

“Limiting distribution results for a discrete parking problem” at the conference “GOCPs 2008: 8th German Open Conference on Probability and Statistics”, Aachen, Germany, 5. 3. 2008.

“Analysis of some exactly solvable diminishing urn models” at the conference “Kolkom '07: 26th Colloquium on Combinatorics”, Magdeburg, Germany, 16. 11. 2007.

“Analysis of some exactly solvable diminishing urn models” at the conference “FPSAC 2007: 19th International Conference on Formal Power Series and Algebraic Combinatorics”, Tianjin, China, 5. 7. 2007 (Poster presentation).

## Scientific talks (continued)

“Analysis of the total costs for variants of the Union-Find algorithm” at the conference “AofA '07: 2007 International Conference on the Analysis of Algorithms”, Juan-les-pins, France, 20. 6. 2007.

“Some applications of the method of moments in the analysis of algorithms” at the conference “CanaDAM 2007: 1st Canadian Discrete and Algorithmic Mathematics Conference”, Banff, Alberta, Canada, 31 5. 2007.

“Analysis of insertion costs in priority trees” at the conference “ANALCO '07: Workshop on Analytic Algorithmics and Combinatorics”, New Orleans, USA, 6. 1. 2007.

“Left and right length of paths in binary trees” at the conference “The Fourth Colloquium on Mathematics and Computer Science”, Nancy, France, 19. 9. 2006 (Poster presentation).

“Some applications of generating functions for obtaining limiting distribution results in random tree models” at Academia Sinica, Taipei, Taiwan, 14. 8. 2006.

“The left-right-imbalance of binary search trees and related questions” at the conference “Analysis of Algorithms 2006”, Alden Biesen, Belgium, 7. 7. 2006.

“Applications of generating functions for limiting distribution results in random tree models” at the “Rhein-Main Kolloquium Stochastik”, Frankfurt, Germany, 21. 6. 2006.

“Recent results on the analysis of increasing trees” at the conference “Carleton Applied Probability Workshop”, Ottawa, Canada, 3. 6. 2006.

“Increasing trees: the combinatorial approach” at Université Paris XIII, France, 11. 4. 2006.

“Analysis of Data Structures and Tree-like Structures” at Fonds zur Förderung der wissenschaftlichen Forschung, Wien, Austria, 20. 10. 2005.

“Label-bezogene Parameter in Increasing trees” at the conference “16. Internationaler Kongress der Österreichischen Mathematischen Gesellschaft”, Klagenfurt, Austria, 21. 9. 2005.

“On path covering numbers of random trees” at the conference “The 12th International Conference on Random Structures and Algorithms”, Poznan, Poland, 4. 8. 2005.

“Some results for monotonically labelled simply generated trees” at the conference “International Conference on the Analysis of Algorithms”, Barcelona, Spain, 6. 6. 2005.

“The distribution of the path edge-covering numbers for random trees” at the conference “Second Brazilian Symposium on Graphs, Algorithms, and Combinatorics”, Angra dos Reis, Brazil, 28. 4. 2005.

“Destruction of recursive trees” at the conference “Third Colloquium on Mathematics and Computer Science”, Wien, Austria, 16. 9. 2004.

“Destruction of certain tree families” at the conference “Seventh Iranian Statistical Conference”, Teheran, Iran, 23. 8. 2004.

“Analysis of some tree statistics” at the conference “Seventh Iranian Statistical Conference”, Teheran, Iran, 23. 8. 2004.

“Climbing and destroying trees” at Academia Sinica, Taipei, Taiwan, 19. 7. 2004.

“More results on priority trees” at the conference “Tenth Seminar on Analysis of Algorithms”, Berkeley, USA, 14. 6. 2004.

“Combinatorial analysis of certain tree parameters” at University of Szeged, Hungary, 19. 4. 2004.

“Discovering the beauty of Concrete Mathematics: Thanks to my advisor and mentor” at University of the Witwatersrand, Johannesburg, South Africa, 27. 2. 2004.

## Scientific talks (continued)

“Distribution results for Steiner-distances in certain tree families” at the conference “ÖMG Tagung 2003”, Bozen, Italy, 23. 9. 2003.

“Non-crossing trees revisited: cutting down and spanning subtrees” at the conference “Discrete Random Walks 2003”, Paris, France, 3. 9. 2003.

“Climbing rooted trees again” at the conference “11th International Conference on Random Structures and Algorithms”, Poznan, Poland, 13. 8. 2003.

“Cutting down trees revisited: a generating functions approach” at the conference “Ninth Seminar on Analysis of Algorithms”, San Miniato, Italy, 25. 6. 2003.

“Verteilungsergebnisse für Steiner-Distanzen in verschiedenen Baumfamilien” at Technische Universität Graz, Austria, 6. 12. 2002.

“Über das asymptotische Verhalten bestimmter rekursiver Algorithmen und rekursiv beschreibbarer Größen von Bäumen” at Technische Universität Wien, Austria, 22. 11. 2002.

“Analysis of Multiple Quickselect variants and of the Steiner distance in Search Trees – A generating functions approach” at University of the Witwatersrand, Johannesburg, South Africa, 27. 8. 2002.

“About Multiple Quickselect and the Spanning Tree Size in Binary Search Trees” at Academia Sinica, Taipei, Taiwan, 10. 7. 2002.

“About Multiple Quickselect and the Spanning Tree Size in Binary Search Trees” at the conference “Eight Seminar on Analysis of Algorithms”, Strobl, Austria, 28. 6. 2002.

“Kombinatorische Analyse von Algorithmen und Datenstrukturen” at Technische Universität Wien, Austria, 05/2001.

“About two combinatorial problems: Height distribution of non-crossing trees and Generalized Fibonacci permutations” at University of Versaille Saint-Quentin en Yvelines, France, 04/2001.

“More results about non-crossing trees” at the conference “Sixth Seminar on Analysis of Algorithms”, Krynica Morska, Poland, 07/2000.

“Neuere Entwicklungen auf dem Gebiet der Computeralgebra in Zusammenhang mit Hypergeometrischer Summation” at Technische Universität Wien, Austria, 11/1999.

“Bivariate Generating functions and limit laws” at University of the Witwatersrand, Johannesburg, South Africa, 08/1999.

“Mathematical Analysis of some Algorithms on search tree structures” at University of the Witwatersrand, Johannesburg, South Africa, 08/1999.

“Kombinatorische Analyse einiger Algorithmen in Verbindung mit Suchbäumen” at Montanuniversität Leoben, Austria, 05/1999.

“Average-Case Analyse von Algorithmen” at Universität Innsbruck, Austria, 10/1998.

“Einige Aspekte der kombinatorischen Analyse von Algorithmen auf Suchbäumen und verwandten Strukturen” at Universität Wien, Austria, 10/1998.

“Moments of level numbers of leaves in binary trees” at the conference “4th International Conference on Lattice Path Combinatorics”, Wien, Austria, 07/1998.

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## Serving for conferences

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Member of the scientific committee of “AofA ’10: Probabilistic, Combinatorial and Asymptotic Methods in the Analysis of Algorithms”, Vienna, 2010.

Member of the organizing committee of “AofA ’10: Probabilistic, Combinatorial and Asymptotic Methods in the Analysis of Algorithms”, Vienna, 2010.

Member of the program committee of “ANALCO’08: Workshop on Analytic Algorithmics and Combinatorics”, San Francisco, 2008.

Member of the organizing committee of the “Third Colloquium on Mathematics and Computer Science”, Vienna, 2004.

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## Editorial work

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Editor for “International Journal of Combinatorics”, since 2009.

Guest editor (together with Helmut Prodinger) for “Annals of Combinatorics”, special issue dedicated to “Analysis of Algorithms”, Annals of Combinatorics 12(4), 2009.

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## Graduate students

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### *PhD student:*

Markus Kuba: PhD thesis: “Analysis of node isolation procedures and label-based parameters in tree structures”, TU Wien, 2006.

Georg Seitz: Current.

### *Diploma students:*

Lukas Riegler: Masters thesis: “Analytische Behandlung von Urnenmodellen”, TU Wien, 2010.

Silvio Dorrighi: Masters thesis: “Analyse und Varianten von In-Situ Permutationsalgorithmen”, TU Wien, 2009.

Georg Seitz: Masters thesis: “Parking functions and generalizations”, TU Wien, 2009.

Martin Heinrich: Masters thesis: “Komplexität und Varianten von Minesweeper”, TU Wien, 2006.

Konrad Podloucky: Masters thesis: “Analysis of non-crossing trees”, TU Wien, 2005.

Philipp Agy: Masters thesis: “Analyse von Prozeduren zum Isolieren von Knoten in Zufallsbäumen”, TU Wien, 2005.

Markus Kuba: Masters thesis: “Multiple quickselect und die Steiner-Distanz in binären Suchbäumen”, TU Wien, 2004.

Alexander Zapletal: Masters thesis: “Algorithmen in der Computeralgebra für Polynomideale und -moduln”, TU Wien, 2004.

## Courses given at universities (Vorlesungen, Seminare, Praktika)

Analyse von Algorithmen: TU Wien, 2000, 2002, 2004, 2006, 2008, 2010.

Einführung in die Analyse von Algorithmen: Univ. Innsbruck, 1999.

Diskrete Methoden: TU Wien, 2007, 2009, 2011.

Einführung in die Computeralgebra: TU Wien, 2001.

Algorithmen der Computeralgebra: TU Wien, 2002, 2003, 2004.

Spezielle Mathematische Methoden der Theor. Informatik: TU Wien, 2003, 2004, 2005.

Computermathematik: TU Wien, 2003, 2004.

Weiterführende Kapitel aus Analyse von Algorithmen: TU Wien, 2009.

Seminar: Wiss. Arbeiten aus Diskreter Mathematik: TU Wien, 2004, 2005.

Seminar aus Diskreter Mathematik: TU Wien, 2006, 2007, 2008, 2010.

Mathematik 1 für Informatik und Wirtschaftsinformatik: TU Wien, 2007, 2009, 2010.

Mathematik 1 für Informatiker: TU Wien, 2003, 2005.

Mathematik 2 für Informatik(er): TU Wien, 2006, 2008, 2010.

Mathematik 3 für Informatik(er): TU Wien, 2002, 2004, 2006, 2008.

Mathematik II für Chemiker: Univ. Innsbruck, 1999.