CURRICULUM VITAE

Gregory Z. Gutin

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Current Post	:	Professor (since Sept. 2000)
Address (work)	:	Department of Computer Science
		Royal Holloway, University of London
		Egham, Surrey, TW20 0EX, UK
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Academic Degrees:

1991–1993	:	**Ph.D. in Mathematics (with distinction)**
		Tel Aviv University, Israel
		Thesis: Cycles and paths in directed graphs
		Supervisor: N. Alon, Baumritter Professor of Maths
1974–1979	:	**M.Sc. in Mathematics (summa cum laude)**
		Gomel State University, Gomel, Byelorussia

Previous Employment:

1996–2000	:	Lecturer, Dept. of Mathematical Sciences
		Brunel University, Uxbridge, Middx, UK;
1993–1996	:	Post Doctoral Fellow/Visiting Lecturer
		Dept. of Math. and Computer Science
		Odense University, Denmark;
1991–1993	:	Teaching Assistant, School of Mathematics
		Tel Aviv University, Israel;
1987–1990	:	Researcher, Byelorussian Research
		Institute for Geology and Geophysics, Minsk, Byelorussia
1982–1987	:	Researcher, Byelorussian Research
		Institute for Oil, Gomel, Byelorussian;
1979–1982	:	School teacher of mathematics, Gomel, Byelorussia

Main Research Interests: parameterized and exponential algorithms, graph theory and algorithms, combinatorial optimisation algorithms and heuristics, applications in logistics, information security, embedded and distributed computing, physics and other areas.

Publications: More than 5650 citations. Full list starts on page 4.

- Two editions of the monograph (with J. Bang-Jensen) *Digraphs: Theory, Algorithms and Applications*, Springer, 2000 (1st Ed., published in Chinese in 2009) and 2009 (2nd Ed.);

- More than 170 papers published or accepted for publication in refereed journals and conference proceedings (preliminary versions of journal paper published in conference proceedings are not counted).

- Edited volume (edited together A.P. Punnen) *Traveling Salesman Problem and Its Variations*, Kluwer, 2002 and Springer, 2007 and eleven chapters/sections for edited books.

Research Grants[1]

- EPSRC grant for 2013/2016: Parameterized Algorithmics for the Analysis and Verification of Constrained Workflow Systems (£744.4 K);

- Royal Society joint international grant (£11.9K) for 2010/12;

- EPSRC grant for 2007/2010 (£403K);

- Royal Society travel grants (2007, £1.3K and 2006, £1K),

- Leverhulme Trust grant for 2003/2005 (£71.7K);

- EPSRC grant for 2000/2003 (£57K);

- Nuffield Foundation grant for 1998/2000 (£2.6K);

- Brunel University grant (BRIEF) for 1997/1998 (£10K);

Consultancy: Optimisation of ship movement using TSP algorithms for Veritas DGC Ltd. (2003)

Academic Prizes, Awards and Honours:

- *Royal Society Wolfson Research Merit Award* for 2014/2018;

- *Kirkman Medal* of International Institute of Combinatorics and Applications (1996);

- *Wolf Prize for PhD students* (1992).

Invited, Keynote and Plenary Talks and Memberships in Program Committees (PCs) since 2009:

2016: PCs of 5th International Conference on Operations Research and Enterprise Systems (ICORES 2016).

2015: PCs of 4th International Conference on Operations Research and Enterprise Systems (ICORES 2015), Frontier of Algorithmics Workshop (FAW 2015), Sixth International Conference on Internet Technologies & Applications 2015 (ITA 15).

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[1]In all listed grants, I am PI; the grants before 2000 were in Brunel University, the others in RHUL.

2014: Keynote talk at the 23rd Cycles Colourings Workshop (Sept., Slovakia), invited talks at Oxford Algorithms Seminar (Jan.), Tel Aviv Combinatorics Seminar (April), Bertinoro Workshop on approximation and parameterized algorithms (May, Italy), Dagstuhl seminar on parameterised algorithms (Nov., Germany); PCs of Frontier of Algorithmics Workshop (FAW 2014), and International Conference on Applied Mathematical Optimization and Modelling (APMOD 2014).

2013: Invited talks at 18th Shonan Seminar (May, Japan); PCs of International Symposium on Parameterized and Exact Computation (IPEC 2013; Chair), International Symposium on Fundamentals of Computation Theory (FCT 2013), Frontier of Algorithmics Workshop - International Conference on Algorithmic Aspects in Information and Management (FAW-AAIM 2013), Workshop on Approximation, Parameterized and Exact algorithms (APEX 2013), and International Conference on Discrete Mathematics (ICDM'13, India);

2012: Invited talks at London Combinatorics Colloquia (May, London, UK), 4th Workshop on Kernelization (June, Dagstuhl, Germany), Durham ACiD Seminar (Oct.), Graph Theory Conference (Nov., Nyborg, Denmark), Seminar on Constraint Satisfaction Problems (November, Dagstuhl, Germany); PCs of European Symposium on Algorithms (ESA 2012), International Workshop on Graph Theoretic Concepts in Computer Science (WG 2012), Genetic and Evolutionary Computation Conference (GECCO'12, Track: Evolutionary Combinatorial Optimization and Metaheuristics);

2011: Invited talks at Discrete Analysis Programme in Newton Institute (June, Cambridge), and 3rd Workshop on Kernelization (September, Vienna, Austria); PCs of International Conference on Internet Technologies and Applications (ITA'11), Genetic and Evolutionary Computation Conference (GECCO'11, Track: Evolutionary Combinatorial Optimization and Metaheuristics);

2010: Keynote talk at 2nd Workshop on Kernelization (November, Leiden, The Netherlands), invited talks at Oxford Combinatorial Theory Seminar (March), Workshop on Parameterized Complexity of Computational Reasoning (August, Brno, Czech Republic), and IPEC 2010; PCs of International Workshop on Graph Theoretic Concepts in Computer Science (WG 2010), International Conference on Discrete Mathematics (ICDM'10), International Symposium on Mathematical Foundations of Computer Science (MFCS 2010), International Symposium on Parameterized and Exact Computation (IPEC 2010);

2009: Plenary talk at International Conference on Discrete Mathematics (India), keynote talks at 1st Workshop on Kernelization (Sept., Bergen, Norway), Dagstuhl Seminar 09511 (Dec., Germany) and Algebra and their Applications (Oct., Minsk, Belarus), invited talk at Graph Theory Conference (Nov., Fredericia, Denmark); PCs of Frontier of Algorithmics Workshop (FAW 2009), and International Conference on Internet Technologies and Applications (ITA 2009).

Conference Organisation: Invited session organiser for 27th Conference of Association of European Operations Research Societies (July 2015, Glasgow, UK), member of IPEC Steering Committee (2011-2015), Workshop on Parameterized Algorithms and Heuristics (May 2013, NII Shonan, Japan), Workshop on Applications of Parameterized Algorithms and Complexity associated with ICALP 2012 (July 2012, Warwick, UK), Dagstuhl Seminar on FPT (July 2007, Dagstuhl, Germany).

Editorial Work:

- Member of Editorial Board of the following journals: *Discrete Optimization* (Elsevier, since 2004), *Order* (Springer, since 2009), *Algorithmic Operations Research* (2006-2012), and *Memetic Computing* (Springer, since 2009);

- co-editor of the book *Traveling Salesman Problem and Its Variations*;

- an area editor for *Encyclopedia of Algorithms*, 2nd Ed., Springer (ongoing);

- co-editor of Proc. of IPEC 20013 in Lect. Notes Comput. Sci. 8246 (2013) and of a special issue of *Algorithmica* devoted to IPEC 2013;

- co-editor of a special issue of *Discrete Optimization* on Parameterized Complexity of Discrete Optimization (vol. 8, no. 1, 2011);

- co-editor of a special issue of *Discrete Optimization* on TSP and its generalizations and modifications (vol. 3, no. 1, 2006);

- co-editor of a special issue of *Discrete Applied Mathematics* on foundations of heuristics (vol. 119, 2002).

PhD students: Alexey Zverovitch (1998-2003), Arash Rafiey (2002-2005), Eun Jung Kim (2007-2010), Daniel Karapetyan (2007-2010), Mark Jones (2009-2013), Robert Crowston (2009-2013), Gabriele Muciaccia (2011-2014), Naomi Farley (Year 2), Bin Sheng (Year 2).

PhD Examining: Nicholas Korpelainen (April 2012, University of Warwick), Michael Lampis (August 2011, City University of New York), Vishu Kumar M. (February 2011, Bangalore University, India), Anush Poghosyan (March 2010, University of West England, UK), Egbert Mujuni (July 2008, University of Dar es Salaam, Tanzania), Rahman Sohel (January 2008, KCL), Snezana Pejic (November 2007, LSE), Morten Hegner Nielsen (October 2006, Odense University, Denmark), Sarah Steiner (July 2006, KCL), Boris Goldengorin (October 2002, Groningen, The Netherlands).

Research Assistants: Ton Kloks (2002/2003), Tommy Jensen (2003/2004), Angela Koller (2004/2005), Andrei Gagarin (2013-), Mark Jones (2013-).

PUBLICATIONS

Books

1. J. Bang-Jensen and G. Gutin, *Digraphs: Theory, Algorithms and Applications*, Springer-Verlag, London, 2000, 754 pp. (translated into Chinese and published by Science Press in 2009), ISBN 1-85233-268-9.

2. *The Traveling Salesman Problem and its Variations* (G. Gutin and A. Punnen, eds.), Kluwer, Dordrecht, 2002, 830 pp. Reprinted by Springer-Verlag in 2007, ISBN: 1-4020-0664-0.

3. J. Bang-Jensen and G. Gutin, *Digraphs: Theory, Algorithms and Applications*, 2nd Ed., Springer-Verlag, London, 2009, ISBN: 978-1-84800-997-4, e-ISBN: 978-1-84800-998-1.

Papers published or accepted for publication in refereed journals

1. R. Crowston, G. Gutin, M. Jones, G. Muciaccia, and A. Yeo, Parameterizations of Test Cover with Bounded Test Sizes. *Algorithmica* 70 (2014), 18 pages.

2. G. Gutin, M. Wahlstrom and A. Yeo, Rural Postman Parameterized by the Number of Components of Required Edges. To appear in *J. Comput. Syst. Sci.*, approx. 20 pages.

3. D. Cohen, J. Crampton, A. Gagarin, G. Gutin and M. Jones, Iterative Plan Construction for the Workflow Satisfiability Problem. *J. Artif. Intel. Res.* 51 (2014), 555–577.

4. G. Gutin and M. Jones, Parameterized Algorithms for Load Coloring Problem, *Inform. Proc. Lett.* 114 (2014) 446–449.

5. R. Crowston, M. Fellows, G. Gutin, M. Jones, E.J. Kim, F. Rosamond, I.Z. Ruzsa, S. Thomassé and A. Yeo, Satisfying More Than Half of a System of Linear Equations Over GF(2): A Multivariate Approach. *J. Comput. Syst. Sci.* 80 (2014) 687–696.

6. R. Crowston, G. Gutin, M. Jones, V. Raman, S. Saurabh and A. Yeo, Fixed-parameter tractability of satisfying beyond the number of variables. *Algorithmica* 68 (2014) 739–757.

7. R. Crowston, G. Gutin, M. Jones and G. Muciaccia. Maximum Balanced Subgraph Problem Parameterized Above Lower Bound. *Theor. Comput. Sci.* 513 (2013) 53–64.

8. G. Gutin, G. Muciaccia and A. Yeo, Parameterized Complexity of k-Chinese Postman Problem. *Theor. Comput. Sci.* 513 (2013) 124–128.

9. R. Crowston, G. Gutin, M. Jones, V. Raman and S. Saurabh, Parameterized Complexity of MaxSat Above Average. *Theor. Comput. Sci.* 511 (2013), 77–84.

10. J. Crampton, G. Gutin and A. Yeo, On the Parameterized Complexity and Kernelization of the Workflow Satisfiability Problem. *ACM Trans. Inform. System & Secur.* 16 (2013), article no. 4.

11. G. Gutin, M. Jones, D. Scheder and A. Yeo, A new bound for 3-satisfiable MaxSat and its algorithmic application. *Inform. & Comput.* 231 (2013), 117–124.

12. R. Crowston, G. Gutin, M. Jones, and A. Yeo, Parameterized Complexity of Satisfying Almost All Linear Equations over $\mathbb{F}_2$. *Theory Comput. Systems*, 52 (2013), 719–728.

13. G. Gutin, G. Muciaccia and A. Yeo, (Non-)existence of Polynomial Kernels for the Test Cover Problem. *Inform. Proc. Lett.* 113 (2013) 123–126.

14. G. Gutin and M. Jones, Note on Large Subsets of Binary Vectors with Similar Distances. *SIAM J. Discrete Math.* 26 (2012), 1108–1111.

15. G. Gutin and A. Yeo, Hypercontractive inequality for pseudo-boolean functions of bounded Fourier width. *Discrete Appl. Math.* 160 (2012), 2323–2328.

16. G. Gutin, A. Johnstone, J. Reddington, E. Scott, and A. Yeo, An algorithm for finding input-output constrained convex sets in an acyclic digraph. *J. Discrete Alg.* 13 (2012), 47–58.

17. R. Crowston, G. Gutin, M. Jones, and A. Yeo, A New Lower Bound on the Maximum Number of Satisfied clauses in Max-SAT and its algorithmic applications. *Algorithmica* 64 (2012), 56–68.

18. G. Gutin, E.J. Kim, A. Soleimanfallah, S. Szeider, and A. Yeo, Parameterized Complexity Results for General Factors in Bipartite Graphs with an Application to Constraint Programming. *Algorithmica*, 64 (2012), 112–125.

19. D. Karapetyan and G. Gutin, Efficient local search algorithms for known and new neighborhoods for the generalized traveling salesman problem. *Europ. J. Oper. Res.* 219 (2012), 234–251.

20. G. Gutin, L. van Iersel, M. Mnich, and A. Yeo, All Ternary Permutation Constraint Satisfaction Problems Parameterized Above Average Have Kernels with Quadratic Number of Variables. *J. Comput. Syst. Sci.* 78 (2012), 151–163.

21. R. Crowston, G. Gutin, M. Jones, and A. Yeo, Parameterized eulerian strong component arc deletion problem on tournaments. *Inform. Proc. Lett.* 112 (2012), 249–251.

22. G. Gutin, M. Jones and A. Yeo, Kernels for Below-Upper-Bound Parameterizations of the Hitting Set and Directed Dominating Set Problems. *Theoretical Comput. Sci.* 412 (2011), 5744–5751.

23. N. Alon, G. Gutin, E.J. Kim, S. Szeider, and A. Yeo, Solving MAX-k-SAT Above a Tight Lower Bound. *Algorithmica*, 61 (2011), 638–655.

24. G. Gutin, T. Mansour and S. Severini, A characterization of horizontal visibility graphs and combinatorics on words. *Physica A: Statistical Mechanics and its Applications* 390 (2011), 2421–2428.

25. D. Karapetyan and G. Gutin, Local Search Heuristics for the Multidimensional Assignment Problem. *J. Heuristics* **17** (2011), 201–249.

26. G. Gutin, E.J. Kim, M. Lampis, and V. Mitsou, Vertex Cover Problem Parameterized Above and Below Tight Bounds. *Theory of Computing Systems* 48 (2011), 402–410.

27. D. Karapetyan and G. Gutin, A New Approach to Population Sizing for Memetic Algorithms: A Case Study for the Multidimensional Assignment Problem. *Evol. Comput.*, 19 (2011), 345–371.

28. G. Gutin, E.J. Kim, S. Szeider, and A. Yeo, A Probabilistic Approach to Problems Parameterized Above or Below Tight Bounds. *J. Comput. Syst. Sci.* 77 (2011), 422–429.

29. D. Karapetyan and G. Gutin, Lin-Kernighan Heuristic Adaptations for the Generalized Traveling Salesman Problem. *Europ. J. Oper. Res.* 208 (2011), 221–232.

30. G. Gutin and A. Yeo, Note on Maximal Bisection above Tight Lower Bound. *Inform. Proc. Lett.*, 110 (2010), 966–969.

31. G. Gutin, E.J. Kim, M. Mnich, and A. Yeo, Betweenness Parameterized Above Tight Lower Bound. *J. Comput. Syst. Sci.* **76** (2010), 872–878.

32. N. Cohen, F. Fomin, G. Gutin, E.J. Kim, S. Saurabh and A. Yeo, Algorithm for Finding k-Vertex Out-trees and its Application to k-Internal Out-branching Problem. *J. Comput. Syst. Sci.* **76** (2010), 650–662.

33. R. Crowston, G. Gutin, and M. Jones, Note on Max Lin-2 above Average. *Inform. Proc. Lett.* **110** (2010), 451–454.

34. A. Gupta, G. Gutin, M. Karimi, E.J. Kim and A. Rafiey, Minimum Cost Homomorphisms to Locally Semicomplete and Quasi-Transitive Digraphs. *Austral. J. Combin.* **46** (2010), 217–232.

35. J. Daligault, G. Gutin, E.J. Kim, and A. Yeo, FPT Algorithms and Kernels for the Directed k-Leaf Problem. *J. Comput. Syst. Sci.* **76** (2010), 144–152.

36. G. Gutin and E.J. Kim, Complexity of the Minimum Cost Homomorphism Problem for Semicomplete Digraphs with Possible Loops. *Discrete Applied Math.* **158** (2010) 319–330.

37. G. Gutin and D. Karapetyan, A Memetic Algorithm for the Generalized Traveling Salesman Problem. *Natural Computing* **9** (2010), 47–60.

38. G. Gutin, A. Rafiey and A. Yeo, Minimum Cost Homomorphism Dichotomy for Oriented Cycles. *Graphs & Combinatorics* **25** (2009), 521–531.

39. P. Dankelmann, G. Gutin and E.J. Kim, On Complexity of Minimum Leaf Out-Branching Problem. *Discrete Applied Math.* **157** (2009), 3000–3004.

40. P. Balister, S. Gerke, G. Gutin, A. Johnstone, J. Reddington, E. Scott, A. Soleimanfallah and A. Yeo, Algorithms for generating convex sets in acyclic digraphs. *J. Discrete Algorithms* **7** (2009), 509–518.

41. G. Gutin, I. Razgon, and E.J. Kim, Minimum Leaf Out-branching and Related Problems. *Theoretical Computer Sci.* **410** (2009), 4571–4579.

42. G. Gutin and A. Yeo, On the number of connected convex subgraphs of a connected acyclic digraph. *Discrete Appl. Math.* **157** (2009), 1660–1662.

43. G. Gutin, Out-branchings with Maximal Number of Leaves or Internal Vertices: Algorithmic Results and Open Problems. *Electronic Notes in Discrete Mathematics* **32** (2009), 75–82.

44. P. Balister, S. Gerke and G. Gutin, Convex sets in acyclic digraphs. *Order* **26** (2009), 95–100.

45. G. Gutin and D. Karapetyan, A Selection of Useful Theoretical Tools for the Design and Analysis of Optimization Heuristics. *Memetic Computing* **1** (2009), 25–34.

46. N. Alon, F. Fomin, G. Gutin, M. Krivelevich and S. Saurabh, Spanning directed trees with many leaves. *SIAM J. Discrete Math.* **23** (2009), 466–476.

47. G. Gutin and D. Karapetyan, Generalized Traveling Salesman Problem Reduction Algorithms. *Algorithmic Operations Research* **7** (2009), 509–518.

48. G. Gutin and E.J. Kim, Introduction to the Minimum Cost Homomorphism Problem for Directed and Undirected Graphs. *Ramanujan Math. Soc. Lect. Notes* **7** (2008), 25–37.

49. G. Gutin, A. Rafiey and A. Yeo, Minimum Cost Homomorphisms to Semicomplete Bipartite Digraphs. *SIAM J. Discrete Math.* **22** (2008), 1624–1639.

50. G. Gutin, S. Szeider and A. Yeo, Fixed-Parameter Complexity of Minimum Profile Problems. *Algorithmica* **52** (2008), 133–152.

51. G. Gutin, A. Rafiey and A. Yeo, Minimum Cost Homomorphisms to Semicomplete Multipartite Digraphs. *Discrete Appl. Math.* **156** (2008), 2429-2435.

52. G. Gutin, Note on edge-colored graphs and digraphs without properly colored cycles. *Austral. J. Combin.* **42** (2008), 137–140.

53. G. Gutin and A. Yeo, Some Parameterized Problems on Digraphs. *The Computer Journal* **51** (2008), 363–371.

54. G. Gutin, B. Goldengorin and J. Huang, Worst Case Analysis of Max-Regret, Greedy and Other Heuristics for Multidimensional Assignment and Traveling Salesman Problems. *Journal of Heuristics* **14** (2008), 169–181.

55. G. Gutin, P. Hell, A. Rafiey and A. Yeo, Dichotomy for Minimum Cost Graph Homomorphisms. *Europ. J. Combin.* **29** (2008), 900–911.

56. G. Gutin, A. Rafiey, S. Szeider and A. Yeo, The Linear Arrangement Problem Parameterized Above Guaranteed Value. *Theory of Computing Systems* **41** (2007), 521–538.

57. D. Ghosh, B. Goldengorin, G. Gutin and G. Jäger, Tolerance-based greedy algorithms for the traveling salesman problem. *Communications in DQM* **10** (2007), 52–70.

58. G. Gutin and A. Yeo, The Greedy Algorithm for the Symmetric TSP. *Algorithmic Oper. Res.* **2** (2007), 33–36.

59. J. Feng, H.-E. Giesen, Y. Guo, G. Gutin, T. Jensen and A. Rafiey, Characterization of edge-colored complete graphs with properly colored Hamilton paths. *J. Graph Theory* 53 (2006), 333–346.

60. G. Gutin, A. Rafiey, S. Severini and A. Yeo, Hamilton Cycles in Digraphs of Unitary Matrices. *Discrete Math.* **306** (2006), 315–320.

61. G. Gutin, T. Jensen and A. Yeo, Domination analysis for minimum multiprocessor scheduling. *Discrete Applied Math.* **154** (2006), 2613–2619. Contribution: 40%. doi:10.1016/j.dam.2006.02.010.

62. G. Gutin, T. Jensen and A. Yeo, Optimal on-line bin packing with two item sizes. *Algorithmic Oper. Res.* **1** (2006), 72–78.

63. G. Gutin, A. Rafiey and A. Yeo, On n-partite tournaments with unique n-cycle. *Graphs & Combinatorics* **22** (2006), 241– 249.

64. G. Gutin, A. Rafiey and A. Yeo, Minimum Cost and List Homomorphisms to Semicomplete Digraphs. *Discrete Applied Math.* **154** (2006), 890–897.

65. G. Gutin, A. Rafiey, A. Yeo and M. Tso, Level of Repair Analysis and Minimum Cost Homomorphisms of Graphs. *Discrete Applied Math.* **154** (2006), 881–889.

66. J. Bang-Jensen, G. Gutin and A. Yeo, Finding a cheapest cycle in a quasi-transitive digraph with real-valued vertex costs. *Discrete Optimization* **3** (2006), 86–94.

67. G. Gutin, A. Koller and A. Yeo, Note on Upper Bounds for TSP Domination Number. *Algorithmic Oper. Res.* **1** (2006), 52–54.

68. G. Gutin and A. Rafiey, Multipartite tournaments with small number of cycles. *Australasian J. Combin.* **34** (2006), 17–21.

69. G. Gutin and F. Glover, Further Extension of TSP Assign Neighborhood. *J. Heuristics* **11** (2005), 501 – 505.

70. G. Gutin, N. Jones, A. Rafiey, S. Severini and A. Yeo, Mediated Digraphs and Quantum Nonlocality. *Discrete Applied Math.* **150** (2005), 41–50.

71. D. Blokh, G. Gutin and A. Yeo, A problem of finding an acceptable variant in generalized project networks. *J. Appl. Math. Decision Sci.* **2** (2005), 75–81.

72. G. Gutin, H. Jakubowicz, S. Ronen and A. Zverovitch, Seismic vessel problem. *Communications in DQM* **8** (2005), 13–20.

73. G. Gutin, T. Kloks, C.M. Lee and A. Yeo, Kernels in planar digraphs. *Journal of Computer and System Sciences* **71** (2005), 174–184.

74. G. Gutin, T. Jensen and A. Yeo, Batched bin packing. *Discrete Optimization* **2** (2005), 71–82.

75. G. Gutin and A. Zverovich, Evaluation of the Contract-or-Patch Heuristic for the Asymmetric TSP. *INFOR* **43** (2005), 23–31.

76. N. Alon, G. Gutin and M. Krivelevich, Algorithms with large domination ratio. *J. Algorithms* **50** (2004), 118–131.

77. G. Gutin, K.M. Koh, E.G. Tay and A. Yeo, On the number of quasi-kernels in digraphs. *J. Graph Theory* **46** (2004), 48–56.

78. J. Bang-Jensen, G. Gutin and A. Yeo, When the greedy algorithm fails. *Discrete Optimization* **1** (2004) 121–127.

79. N. Gulpinar, G. Gutin, G. Mitra and A. Zverovitch, Extracting Pure Network Submatrices in Linear Programs Using Signed Graphs. *Discrete Applied Mathematics* **137** (2004) 359–372.

80. G. Gutin and A. Rafiey, When n-cycles in n-partite tournaments are longest cycles. *Discrete Math.* **289** (2004) 163–168.

81. D. Blokh and G. Gutin, Two-parameter assignment problem for diagonal three-index matrices. *Communications in DQM* 7(2) (2004) 57–63.

82. D. Blokh and G. Gutin, Two parameters maximizing travelling salesman problem for special matrices. *Communications in DQM* **7**(1) (2004) 27–35.

83. J. Bang-Jensen, G. Gutin and A. Yeo, Steiner type problems for digraphs that are locally semicomplete or extended semicomplete. *J. Graph Theory* **44** (2003) 193–207.

84. D. Ben-Arieh, G. Gutin, M. Penn, A. Yeo and A. Zverovitch, Process planning for rotational parts and the generalized Traveling Salesman Problem. *International Journal of Production Research* **41** (2003) 2581–2596.

85. G. Gutin and A. Yeo, Assignment problem based algorithms are impractical for the generalized TSP. *Ausralasian J. Combinatorics* **27** (2003) 149–154.

86. G. Gutin, A. Vainshtein and A. Yeo, Domination Analysis of Combinatorial Optimization Problems. *Discrete Applied Mathematics* **129** (2003) 513–520.

87. G. Gutin and A. Yeo, Upper bounds on ATSP neighborhood size. *Discrete Applied Mathematics* **129** (2003) 533–538.

88. D. Ben-Arieh, G. Gutin, M. Penn, A. Yeo and A. Zverovitch, Transformations of generalized ATSP into ATSP. *Operations Research Letters* **31** (2003) 357–365.

89. G. Gutin and A. Zverovitch, Extracting pure network submatrices in linear programs using signed graphs, Part 2. *Communications of DQM* **6** (2003) 58–65.

90. G. Gutin and A. Yeo, Anti-matroids. *Operations Research Letters* **30** (2002) 97–99.

91. G. Gutin, A. Zverovitch and D. Blokh, A heuristic for the Resource-Constrained Traveling Salesman Problem. *Communications of DQM* **5** (2002) 6–15.

92. G. Gutin and A. Yeo, Polynomial approximation algorithms for the TSP and the QAP with a factorial domination number. *Discrete Applied Mathematics* **119** (2002) 107–116.

93. G. Gutin, A. Yeo and A. Zverovich, Traveling salesman should not be greedy: domination analysis of greedy-type heuristics for the TSP. *Discrete Applied Mathematics* **117** (2002) 81–86.

94. G. Gutin and A. Yeo, Orientations of digraphs almost preserving diameter. *Discrete Applied Mathematics* **121** (2002) 129–138.

95. G. Gutin, K.M. Koh, E.G. Tay and A. Yeo, Almost minimum diameter orientations of semicomplete multipartite and extended digraphs. *Graphs & Combinatorics* **18** (2002) 473–477.

96. G. Gutin and A. Yeo, TSP tour domination and Hamilton cycle decompositions of regular digraphs. *Operations Research Letters* **28** (2001) 107–111.

97. G. Gutin and A. Yeo, Remarks on hamiltonian digraphs. *Australasian J. Combinatorics* **23** (2001) 115–118.

98. G. Gutin and A. Yeo, Solution of a conjecture of Volkmann on the number of vertices in longest paths and cycles of strong semicomplete multipartite digraphs. *Graphs & Combinatorics* **17** (2001) 473–477.

99. F. Glover, G. Gutin, A. Yeo and A. Zverovich, Construction heuristics for the asymmetric TSP. *European J. Operational Research* **129** (2001) 555–568.

100. D. Golenko-Ginzburg, D. Blokh and G. Gutin, A two-parametric approximate method to optimize alternative activity network models. Part 1: The general approach and the algorithm. *Communications in Dependability and Quality Management* **3** (2000) 18–24.

101. N. Gulpinar, G. Gutin, G. Mitra and I. Maros, Detecting embedded network structures in linear programs. *Computational Optimization and Applications* **15** (2000) 235–247.

102. G. Gutin, M. Tewes and A. Yeo, Longest paths in strong spanning oriented subgraphs of strong semicomplete multipartite digraphs. *Discrete Mathematics* **222** (2000) 269–274.

103. G. Gutin and A. Yeo, Kings in semicomplete multipartite digraphs. *J. Graph Theory* **33** (2000) 177–183.

104. G. Gutin and A. Yeo, Quasi-hamiltonian digraphs: a series of necessary conditions for a digraph to be hamiltonian. *J. Combin. Theory, Ser. B* **78** (2000) 232–242.

105. G. Gutin, A. Kostochka and B. Toft, On the Hajós number of graphs. *Discrete Mathematics* **213** (2000) 153-161.

106. G. Gutin, Connected (g, f)-factors and supereulerian digraphs. *ARS Combinatoria* **54** (2000) 311-317.

107. G. Gutin and A. Yeo, Note on the path covering number of a semicomplete multipartite digraph. *J. Combin. Math. and Combin. Computing* **32** (2000) 231–237.

108. J. Bang-Jensen and G. Gutin, On the complexity of hamiltonian path and cycle problems in certain classes of digraphs. *Discrete Applied Mathematics* **95** (1999) 41–60.

109. G. Gutin, Exponential neighbourhood local search for the traveling salesman problem. Special Issue of *Computers and OR* on the TSP **26** (1999) 313-320.

110. G. Gutin and A. Yeo, Small diameter neighbourhood graphs for the traveling salesman problem: at most four moves from tour to tour. Special Issue of *Computers and OR* on the TSP **26** (1999) 321-327.

111. J. Bang-Jensen, G. Gutin and A. Yeo, A polynomial algorithm for the Hamiltonian cycle problem in semicomplete multipartite digraphs. *J. Graph Theory* **29** (1998) 111-132.

112. J. Bang-Jensen and G. Gutin, Generalizations of tournaments: A survey. *J. Graph Theory,* **28** (1998) 171-202.

113. G. Gutin, B. Sudakov and A. Yeo, Note on alternating directed cycles. *Discrete Math.* **191** (1998) 101-107.

114. G. Gutin and V. Zverovich, Upper Domination and Upper Irredundance Perfect Graphs. *Discrete Math.* **190** (1998) 95-105.

115. J. Bang-Jensen and G. Gutin, Alternating cycles and trails in 2-edge-coloured multigraphs. *Discrete Math.* **188** (1998) 61-72.

116. G. Gutin, A note on cardinality of certain classes of unlabeled multipartite tournaments. *Discrete Math.* **186** (1998) 277-280.

117. J. Bang-Jensen, G. Gutin and A. Yeo, Properly coloured Hamiltonian paths in edge-coloured complete graphs. *Discrete Appl. Math.* **82** (1998) 247-250.

118. N. Alon and G. Gutin, Properly colored Hamilton cycles in edge colored complete graphs. *Random Structures and Algorithms* **11** (1997) 179-186.

119. G. Gutin and A. Yeo, Hamiltonian paths and cycles in hypertournaments. *J. Graph Theory* **25** (1997) 277-286.

120. J. Bang-Jensen, Y. Guo, G. Gutin and L. Volkmann, A classification of locally semicomplete digraphs. *Discrete Math.* **167/168** (1997) 101-114.

121. J. Bang-Jensen, G. Gutin and A. Yeo, Hamiltonian cycles avoiding the arcs of prescribed subtournaments in tournaments. *Combinatorics, Probability and Computing.* **6** (1997) 255-261.

122. J. Bang-Jensen and G. Gutin, Alternating cycles and paths in edge-coloured multigraphs: a survey. *Discrete Math.* **165/166** (1997) 39–60.

123. J. Bang-Jensen and G. Gutin, Paths and cycles in extended and decomposable digraphs. *Discrete Math.* **164** (1997) 5–19.

124. J. Bang-Jensen and G. Gutin, Vertex heaviest paths and cycles in quasi-transitive digraphs. *Discrete Math.* **163** (1996) 217–223.

125. J. Bang-Jensen, G. Gutin and A. Yeo, On k-strong and k-cyclic digraphs. *Discrete Math.* **162** (1996) 1-11.

126. J. Bang-Jensen, G. Gutin and J. Huang, A sufficient condition for a semicomplete multipartite digraph to be Hamiltonian. *Discrete Math.* **161** (1996) 1-12.

127. J. Bang-Jensen and G. Gutin, Paths, trees and cycles in tournaments, *Surveys in Graph Theory* (eds. G. Chartrand and M. Jacobson) in *Congr. Numer.* **115** (1996) 131-170.

128. J. Bang-Jensen, G. Gutin and H. Li, Sufficient conditions for a digraph to be Hamiltonian. *J. Graph Theory* **22** (1996) 181-187.

129. G. Gutin and A. Yeo, Ranking the vertices of a complete multipartite paired comparison digraph. *Discrete Appl. Math.* **69** (1996) 75–82.

130. D. Blokh and G. Gutin, An approximate algorithm for combinatorial optimization problems with two parameters. *Ausralasian J. Combin.* **14** (1996) 157-164.

131. G. Gutin, Cycles and paths in semicomplete multipartite digraphs, theorems and algorithms: a survey. *J. Graph Theory*, **19** (1995) 481-505.

132. D. Blokh and G. Gutin, Maximizing traveling salesman problem for special matrices. *Discrete Appl. Math.*, **56** (1995) 83-86.

133. J. Bang-Jensen, G. Gutin and J. Huang, Weakly Hamiltonian-connected ordinary multipartite tournaments. *Discrete Math.* **138** (1995) 63-74.

134. G. Gutin, Characterizations of vertex pancyclic and pancyclic ordinary semicomplete multipartite digraphs. *Discrete Math.*, **141** (1995) 153-162.

135. G. Gutin, Polynomial algorithms for finding Hamiltonian paths and cycles in quasi-transitive digraphs. *Australasian J. Combin.* **10** (1994) 231-236.

136. G. Gutin, Minimizing and maximizing the diameter in orientations of graphs, *Graphs and Combinatorics.* **10** (1994) 225-230.

137. G. Gutin, Finding a longest path in a complete multipartite digraph. *SIAM J. Discrete Math.*, **6** (1993) 270-273 (MR 94b#05120).

138. G. Gutin, A note on cycles in multipartite tournaments. *J. Combin. Th. Ser. B*, **58** (1993) 319-321 (MR 94a#05118).

139. G. Gutin, Determining the ranks of vertices in a complete multipartite graph of paired comparisons. *Automation and Remote Control. no. 10* (1989) 139-147 (MR 90h#05060).

140. G. Gutin, m-sources in complete multipartite digraphs, *Vestsi Acad. Navuk BSSR Ser. Fiz.-Mat. no. 5* (1989) 101-106 (in Russian, MR 90m#05060).

141. G. Gutin, Characterization of vertex pancyclic partly oriented k-partite tournaments, *Vestsi Acad. Navuk BSSR Ser.Fiz.-Mat. no. 2* (1989) 41-46 (in Russian, MR 91#05085).

142. G. Gutin, On the efficiency of a local algorithm for solving the traveling salesman problem. *Automation and Remote Control. no. 11, part 2* (1988) 1514-1519 (MR 90a#90053).

143. G. Gutin, Characterization of complete n-partite digraphs that have a Hamiltonian path, *Kibernetika no. 1* (1988) 107-108 (MR 89d#05127) (in Russian).

144. G. Gutin, Finding the largest contour in a complete bipartite digraph. *Kibernetika* No.2, 117-118 (1987) (in Russian).

145. G. Gutin, The radii of n-partite tournaments, *Math. Notes.* **40** (1986) 414–417 (MR 88a#05073).

146. G. Gutin, V. Kokorev, M. Sattarov and I. Streshinsky, Optimal distribution of deep pumps among oil wells. *Express informatzia Ser. Neftepromislovoe Delo, No. 7* (1986) 1-4 (In Russian).

147. G. Gutin, Effective characterization of complete bipartite digraphs that have a Hamiltonian path. *Kibernetika. no. 4* (1985) 124–125 (in Russian, MR 87b#05060).

148. G. Gutin, On cycles in strong n-partite tournaments. *Vestsi Acad. Navuk BSSR Ser. Fiz.-Mat. no. 5* (1984) 105-106 (in Russian, MR 86b#05035).

149. G. Gutin, Criterion for complete bipartite digraphs to be Hamiltonian. *Vestsi Acad. Navuk BSSR Ser. Fiz.-Mat. no. 1* (1984) 99-100 (in Russian, MR 85m#05048).

150. G. Gutin, A. Lerman, I. Mulica and I. Streshinsky, On calculation methods for the liquid-gas lift. *Neft. Hozyaystvo No 6* (1983) 45-46 (In Russian).

Papers in conference proceedings (full versions not published in journals)

1. G. Gutin, S. Kratsch and M. Wahlstrom, Polynomial Kernels and User Reductions for the Workflow Satisfiability Problem. In *IPEC 2014*, Lect. Notes Comput. Sci. 8894 (2014).

2. G. Gutin, M. Jones and B. Sheng, Parameterized Complexity of the k-Arc Chinese Postman Problem. In *ESA 2014*, Lect. Notes Comput. Sci. 8737 (2014), 530–541.

3. G. Gutin, M. Jones, B. Sheng and M. Wahlstrom, Parameterized Directed k-Chinese Postman Problem and k Arc-Disjoint Cycles Problem on Euler Digraphs. In *WG 2014*, Lect. Notes Comput. Sci. 8747 (2014), 1–13.

4. D. Cohen, J. Crampton, A. Gagarin, G. Gutin and M. Jones, Engineering Algorithms for Workflow Satisfiability Problem with User-Independent Constraints. In *FAW 2014*, Lect. Notes Comput. Sci. 8497 (2014), 48–59.

5. J. Crampton, R. Crowston, G. Gutin, M. Jones, and Ramanujan M.S., Fixed-Parameter Tractability of Workflow Satisfiability in the Presence of Seniority Constraints. In *FAW-AAIM 2013*, Lect. Notes Comput. Sci. 7924 (2013), 198–209.

6. J. Crampton and G. Gutin, Constraint Expressions and Workflow Satisfiability. In *18th ACM SACMAT* (2013), 73–84.

7. R. Crowston, G. Gutin and M. Jones, Directed Acyclic Subgraph Problem Parameterized above Poljak-Turzik Bound. In *FSTTCS 2012*, LIPICS Vol. 18, 400–411, 2012.

8. R. Crowston, G. Gutin, M. Jones, S. Saurabh and A. Yeo, Parameterized Study of the Test Cover Problem. In *MFCS 2012*, Lect. Notes Comput. Sci. 7464 (2012), 283–295.

9. G. Gutin and A. Yeo, Constraint satisfaction problems parameterized above or below tight bounds: a survey. In *Fellows Festschrift*, Lect. Notes Comput. Sci. 7370 (2012), 257–286.

10. R. Crowston, M. Fellows, G. Gutin, M. Jones, F. Rosamond, S. Thomassé and A. Yeo, Simultaneously Satisfying Linear Equations Over $\mathbb{F}_2$: MaxLin2 and Max-r-Lin2 Parameterized Above Average. In *FSTTCS 2011*, LIPICS Vol. 13, 229–240.

11. R. Crowston, G. Gutin, M. Jones, E.J. Kim, and I.Z. Ruzsa, Systems of Linear Equations over $\mathbb{F}_2$ and Problems Parameterized above Average. In *SWAT 2010*, Lect. Notes Comput. Sci. 6139 (2010), 164–175.

12. J. Bang-Jensen and G. Gutin, Out-branchings with Extremal Number of Leaves. *Ramanujan Math. Soc. Lect. Notes* **13** (2010) 91–99.

13. G. Gutin, D. Karapetyan and I. Razgon, Fixed-parameter Algorithms in Analysis of Heuristics for Extracting Pure Networks in Linear Programs. In *IWPEC'09*, Lect. Notes Comput. Sci. 5917 (2009), 222–233.

14. J. Reddington, G. Gutin, A. Johnstone, E. Scott, and A. Yeo, Better than optimal: fast identification of custom instruction candidates. In *7th IEEE/IFIP International Conference on Embedded and Ubiqutious Computing (EUC-09)*, 2009, pp. 17–24.

15. G. Gutin and D. Karapetyan, A Memetic Algorithm for the Multidimensional Assignment Problem. In *Stochastic Local Search Workshop 2009*, Lect. Notes Comput. Sci. 5752 (2009), 125–129.

16. D. Karapetyan, G. Gutin and B. Goldengorin, Empirical evaluation of construction heuristics for the multidimensional assignment problem. London Algorithmics 2008: Theory and Practice, College Publications, 2009, pp. 107–122.

17. G. Gutin and E.J. Kim, Properly Coloured Cycles and Paths: Results and Open Problems. In *Golumbic Festschrift*, Lect. Notes Comput. Sci. 5420 (2009), 200–208.

18. G. Gutin and D. Karapetyan, Local Search Heuristics For The Multidimensional Assignment Problem. In *Golumbic Festschrift*, Lect. Notes Comput. Sci. 5420 (2009), 100–115.

19. G. Gutin, D. Karapetyan and N. Krasnogor, A memetic algorithm for the generalized traveling salesman problem. In *Nature Inspired Cooperative Strategies for Optimization (NICSO) 2007*, Springer Studies in Computational Intelligence **129** (2008), 199–210.

20. N. Alon, F. Fomin, G. Gutin, M. Krivelevich and S. Saurabh, Parameterized Algorithms for Directed Maximum Leaf Problems. In *ICALP 2007*, Lect. Notes Comput. Sci. 4596 (2007), 352–362.

21. F. Glover, G. Gutin, A. Yeo and A. Zverovich, Construction heuristics and domination analysis for the Asymmetric TSP, In *3rd Workshop on Algorithm Engineering, 1999*, Lect. Notes Comput. Sci. 1668 (1999), 85–94.

22. G. Gutin, On an approach to enumeration of cycles in digraphs. In *8th USSR Conference on Theoretical Cybernetics*, 1988, Part 1, 102–103 (in Russian).

23. G. Gutin, On an approach to solving the traveling salesman problem. In *USSR Conference on System Research* (1984), 184–185 (in Russian).

Chapters and sections in books

1. G. Gutin, Kernelization: Constraint Satisfaction Problems Parameterized above Average. *Encyclopedia of Algorithms*, 2nd Ed., Springer, to appear.

2. G. Gutin, Kernelization: Permutation CSPs Parameterized above Average. *Encyclopedia of Algorithms*, 2nd Ed., Springer, to appear.

3. G. Gutin, Domination Analysis in Combinatorial Optimization. *Encyclopedia of Optimization*, 2nd Ed., Springer, New York, 2009, pp. 792–802.

4. G. Gutin, Traveling Salesman Problem. *Encyclopedia of Optimization*, 2nd Ed., Springer, New York, 2009, pp. 3935–3944.

5. G. Gutin and D. Karapetyan, Greedy Like Algorithms for the Traveling Salesman and Multidimensional Assignment Problems. Chapter 16 in *Greedy Algorithms* (W. Bednorz, ed.), IN-TECH, 2008.

6. D. Ghosh, B. Goldengorin, G. Gutin and G. Jäger, Tolerance-based greedy algorithms for the traveling salesman problem. Chapter 5 in: *Mathematical Programming and Game Theory for Decision Making* (S.K. Neogy, R.B. Bapat, A.K. Das and T. Parthasarathy, eds.), World Scientific, N.J., 2008, pp. 47–59.

7. G. Gutin and A. Yeo, Domination Analysis of Combinatorial Optimization Algorithms and Problems. *Graph Theory, Combinatorics and Algorithms: Interdisciplinary Applications* (M.C. Golumbic and I.B.-A. Hartman, eds.), Springer-Verlag, 2005.

8. G. Gutin, Independence and Cliques. *Handbook of Graph Theory* (J. Gross and J. Yellen, eds.), CRC Press, 1st Edition 2003 and 2nd Edition 2013.

9. G. Gutin, Traveling Salesman Problems. *Handbook of Graph Theory* (J. Gross and J. Yellen, eds.), CRC Press, 1st Edition 2003 and 2nd Edition 2013.

10. G. Gutin, A. Yeo and A. Zverovitch, Exponential Neighborhoods and Domination Analysis for the TSP. In *The Traveling Salesman Problem and its Variations* (G. Gutin and A. Punnen, eds.), Kluwer, Dordrecht, 2002, pp. 223–256.

11. D.S. Johnson, G. Gutin, L. McGeoch, A. Yeo, X. Zhang, and A. Zverovitch, Experimental Analysis of Heuristics for ATSP. In *The Traveling Salesman Problem and its Variations* (G. Gutin and A. Punnen, eds.), Kluwer, Dordrecht, 2002, pp. 445–487.