

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

Personal Information

Address: Department of Mathematics
SFU Surrey.
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Citizenship: Canadian

Educational Background

1990 Ph.D Operations Research Indian Institute of Technology, Kanpur, India.
1983 M.Sc. Mathematics Kanpur University, India.
1981 B.Sc. Mathematics Kerala University, India.
2009 Professional Training Administrative Justice: A course for decision makers in post secondary educational institutions, BC Council of Administrative Tribunals.

Employment History

July 2005 - Current	Professor, Mathematics Simon Fraser University, Canada
July 2006- July 2009	Founding Director, Center for Operations Research and Decision Sciences
July 2000 - June 2005	Professor, Mathematics University of New Brunswick - Saint John, Canada
July 1996 - June 2000	Associate Professor, Mathematics University of New Brunswick - Saint John, Canada
July 1994 - June 1996	Assistant Professor, Mathematics, University of New Brunswick - Saint John, Canada
August 1993 - May 1994	Visiting Assistant Professor, Mathematics University of Colorado - Denver, USA
August 1992 - July 1993	Post-doctoral fellow, Faculty of Administration, University of New Brunswick - Fredericton, Canada
September 1991 - July 1992	Post-doctoral fellow, Business Administration, University of Windsor, Canada
October 1990 - June 1991	Visiting Assistant Professor, CORE Universite Catholique de Louvain - Belgium.
July 1990 - August 1990	Assistant Professor, Computers and Systems Science, Jawaharlal Nehru University - India.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

Section II - Teaching

Taught a variety of courses from first year undergraduate to graduate levels, have very good teaching evaluations, and supervised several research students and post-doctoral fellows. Also, I was actively involved in curriculum developments.

1. Introduced B.Sc in Operations Research (Jointly with other colleagues in Surrey, revising the Industrial Mathematics program) 2010-2011
2. Introduced M.Sc and PhD programs in Operations Research (Jointly with other Surrey colleagues) 2009-2011.
3. Math 208 Introduction to Operations Research, 2007-08 (Jointly with other Surrey colleagues)
4. Math 808 Advanced linear programming, 2007-08
5. Introduced the option of "Operations Research and applied statistics" in B.Sc Industrial mathematics. (Jointly with other surrey colleagues)
6. Math 348 Probabilistic models in operations research (New course introduced), 2005
7. Math 448 Network Flows (New course introduced), 2005
8. Math 409 Discrete Optimization (New course introduced), 2005
9. Math 402W Operations Research Clinic (New course introduced), 2010
10. Introduced the Industrial Mathematics (New Operations Research option, Jointly with Norman Reilly)
11. Revised the program B.Sc. Management and Systems Sciences (Jointly with Tom Loughin)

Section III - Research

Major Research Interests

Discrete Optimization; Operations Research; Operations Management; Design, analysis, implementation, and testing of Algorithms; Metaheuristics; Operations Research applications in scheduling, transportation, logistics, natural resources, healthcare and medicine.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

Research/Project Funding

#	Program/Source	Year	Amount	My Status	Co-applicants
1	NSERC Discovery accelerator award	2015-2017	\$120,000	PI	none
2	NSERC Discovery grant	2015-2019	\$140,000	PI	none
3	Mitacs Accelerate	2014	\$12,000	co-PI	1Qbit Inc.
4	BC Ferries Contract	2013	\$4,000	PI	none
5	BC Ferries Contract	2012-2013	\$22,400	PI	none
6	NSERC Discovery grant	2010-2014	\$165,000	PI	none
7	NSERC (CRD)	2011-2014	\$70,000	PI	none
8	MDA Corporation (CRD)	2011-2014	\$70,000	PI	none
9	NSERC Discovery accelerator award	2010-2014	\$120,000	PI	none
10	NSERC (Engage, a2b fiber)	2011	\$24,250	PI	none
11	BC Ferries (MITACS)	2011	\$4,000	PI	none
12	BC Ferries (contract)	2011	\$6,000	PI	none
13	MITACS Project	2009-2011	\$70,000	co-applicant	PI - B Battacharya
14	NSERC RTI grant	2007	\$29,000	PI	5 others
15	BC Ferries (MITACS)	2007	\$9000	PI	none
16	MITACS Project	2006-2009	\$80,000	co-applicant	PI - B Battacharya
17	NSERC Discovery grant	2005-2009	\$119,540	PI	none
18	Presidents's Research Grant, SFU	2005-2006	\$10,000	PI	none
19	SFU Start up Grant	2005	\$15,000	PI	none
20	NSERC Equipment grant	2004	\$15,703	PI	none
21	Day & Ross Transportation Research contract	2003-2005	\$164,600	co-PI	J. Christie, D. Du, S. Satir
22	New Brunswick Medical Research Fund	2003 - 2004	\$20,000	co-applicant	V. Joshi, P. Forsythe
23	NSERC Discovery grant	1999-2004	\$119,540	PI	none
24	British Council grant	1997	\$904	PI	none
25	NSERC Equipment Grant	1995	\$12,910	PI	none
26	NSERC grant	1995-1998	\$82,800	PI	none
27	UNB Research grant	1994-1995	\$2,050	PI	none

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

Refereed Journal Publications

1. A. P. Punnen, P. Sripratak, and D. Karapetyan, The bipartite unconstrained 0-1 quadratic programming problem: Polynomially solvable cases, *Discrete Applied Mathematics* 193 (2015) 1–10.
2. D. Karapetyan, K. T. Malladi, S. Mitrovic-Minic, and A. P. Punnen, Satellite downlink scheduling problem: A case study, *Omega*, 53 (2015) 115-123.
3. A. P. Punnen, P. Sripratak, and D. Karapetyan, Average value of solutions for the bipartite boolean quadratic programs and rounding algorithms, *Theoretical Computer Science*, 565 (2015) 77–89.
4. F. Glover, T. Ye, A.P. Punnen, G. Kochenberger, Integrating tabu search and VLSN search to develop enhanced algorithms: A case study using bipartite boolean quadratic programs, *European Journal of Operational Research* 241 (2015) 697-707.
5. A.P. Punnen, S. Taghipour, D. Karapetyan and B. Bhattacharya, The quadratic balanced optimization problem, *Discrete Optimization* 12 (2014) 47-60.
6. J. LaRusic and A.P. Punnen, The asymmetric bottleneck traveling salesman problem: algorithms, complexity and empirical analysis, *Computers and Operations Research* 43 (2014) 20–35.
7. A. P. Punnen and S. N. Kabadi, A linear time algorithm for the Koopmans-Beckman QAP linearization and related problems, *Discrete Optimization* 10 (2013) 200–209.
8. R. Zhang and A.P. Punnen, Quadratic bottleneck knapsack problems, *Journal of Heuristics* 19 (2013) 573–589.
9. D. Karapetyan and A.P. Punnen, A reduced integer programming model for the ferry scheduling problem, *Public Transport* 4 (2013) 151–163.
10. T. Oncan, R. Zhang and A.P. Punnen, Minimum cost matching problem with conflict pair constraints, *Computers and Operations Research* 40 (2013) 920–930.
11. S.N. Kabadi and A. P. Punnen, Spanning cactus of a graph: Extension, optimization, and approximation. *Discrete Applied Mathematics* 161 (2013) 167–175.
12. A.P. Punnen and R. Zhang, Analysis of an approximate greedy algorithm for the maximum edge clique partitioning problem, *Discrete Optimization* 9 (2012) 205-208.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

13. J. LaRusic, A.P. Punnen, and E. Aubanel, Experimental analysis of algorithms for the bottleneck traveling salesman problem and its variations, *Journal of Heuristics* 18 (2012) 473-503.
14. Q. Han and A.P. Punnen, On the approximability of vertex cover and related problems, *Discrete Applied Mathematics*. 160 (2012) 197-203.
15. D. K. Benvenuti and A.P. Punnen, Three-value TSP and linkages with the three value linear spanning 2-forests, *Discrete Applied Mathematics* 160 (2012) 38-52.
16. S. N. Kabadi and A. P. Punnen, An $O(n^4)$ algorithm for the QAP linearization problem, *Mathematics of Operations Research* 36 (2011) 754-761.
17. A.P. Punnen and R. Zhang, Quadratic bottleneck Problems, *Naval Research Logistics*, 58 (2011) 153-164.
18. R. Zhang, S.N. Kabadi and A.P. Punnen, Minimum spanning tree problem with conflict constraints and variations, *Discrete Optimization*, 8 (2011) 191-205.
19. L. Turner, A. P. Punnen, Y. P. Aneja, and H. W. Hamacher, On generalized balanced optimization problems, *Mathematical Methods of Operations Research*, 73 (2011) 19–27.
20. J. LaRusic and A.P. Punnen, The balanced traveling salesman problem, *Computers and Operations Research* 38 (2011) 868-875
21. S. N. Kabadi and A. P. Punnen, Trioid: A generalization of matroid and the associated polytope, *Algorithmic operations research* 6 (2011) 29-39.
22. D. K. Benvenuti and A.P. Punnen, SC-Hamiltonicity and its Linkages with strong Hamiltonicity of a graph, *SIAM Journal of Discrete Mathematics*, 23 (2010) 2035-2041
23. T. Oncan and A.P. Punnen, A Lagrangian Based Lower Bounding Procedure and an Efficient Search Algorithm for the Quadratic Minimum Spanning Tree Problem, *Computers and Operations Research* (2010) 1762-1773.
24. D. K. Benvenuti and A.P. Punnen, SC-Hamiltonian graphs and digraphs: New necessary conditions and impacts, *Discrete Mathematics*, 310 (2010) 2841-2846
25. P. Pandey and A.P. Punnen, Piecewise linear fractional programming with Network Flow structure. *Opsearch* 46 (2009) 359-389.
26. R. Ramakrishnan, A.P. Punnen, P. Sharma, An efficient heuristic algorithm for the bottleneck traveling salesman problem. *Opsearch* 46 (2009) 275-288.
27. S. Mitrovic-Minic and A.P. Punnen, Local Search Intensified: Very Large-Scale Variable Neighborhood Search for the Multi-Resource Generalized Assignment Problem. *Discrete optimization* 6 (2009) 370-377.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

28. Q. Han, A.P. Punnen, Y. Ye, An edge-reduction algorithm for the vertex cover problem *Operations Research Letters* 37 (2009) 181-186.
29. S. Mitrovic-Minic and A.P. Punnen, Variable intensity local search. *Annals of Information Systems* 10 (2009) 245-252.
30. R. Zhang and A.P. Punnen, Bottleneck Flows in Networks, *Information processing letters* 109 (2009) 334-338.
31. S. Mitrovic-Minic and A.P. Punnen, Very large-scale variable neighborhood search for the generalized assignment problem *Journal of Interdisciplinary Mathematics*, 11 (2008) 653-670.
32. S.N. Kabadi and A.P. Punnen, A strongly polynomial simplex method for the linear fractional assignment problem, *Operations Research Letters* 36 (2008) 402-407.
33. T. Oncan, S.N. Kabadi, K.P.K. Nair, A.P. Punnen, VLSN search algorithms for partitioning problems, *Journal of the operational research society*, UK, 59 (2008)388-398
34. P. Pandey and A.P. Punnen, Simplex method for piecewise-linear fractional programming problem, *European Journal of Operational Research*, 178 (2007) 343-358
35. N. Belacel, H. Raval, and A.P. Punnen, Learning multicriteria classification method PROAFTN from data, *Computers and Operations Research* 34 (2007) 1885-1898
36. S.N. Kabadi and A.P. Punnen, On cost matrices with two and three distinct values of Hamiltonian paths and cycles, *SIAM Journal of Discrete Mathematics* 20 (2006) 977-998
37. O. Chapovska and A.P. Punnen, Variations of the prize collecting Steiner tree problem, *Networks*, 47 (2006) 199-205
38. A.P. Punnen, Domination analysis of the prize collecting TSP, *Ganita* 55 (2005) 87-98.
39. A.P. Punnen Minmax strongly connected subgraph problem with node weights, *Journal of applied mathematics and decision sciences* (2005) 107-111
40. A.P. Punnen and O. Chapovska, The Bottleneck k-MST, *Information Processing Letters* 95 (2005) 512-517.
41. J.B. Orlin, A.P. Punnen, A. Schulz, Approximate local search in combinatorial optimization, *SIAM Journal of Computing* 33 (2004) 1201-1214.
42. A.P. Punnen and Y.P. Aneja, Lexicographic balanced optimization problems, *Operations Research Letters* 32 (2004) 27-30
43. A.P. Punnen, On bottleneck Assignment problem under categorization, *Computers and Operations Research* 31 (2004) 151-154.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

44. S.N. Kabadi and A.P. Punnen, Weighted graphs with Hamiltonian cycles of same length, *Discrete Mathematics*, 271 (2003) 129-139.
45. A.P. Punnen, F. Margot, and S.N. Kabadi, TSP heuristics: domination analysis and complexity, *Algorithmica* 35 (2003) 111-127.
46. A.P. Punnen and S.N. Kabadi, Domination Analysis of some heuristics for the asymmetric traveling salesman problem, *Discrete Applied Mathematics* 119 (2002) 117-128.
47. R.K. Ahuja, O. Ergun, J.B. Orlin, A.P. Punnen, A survey of very large scale neighborhood search techniques, *Discrete Applied Mathematics* 123 (2002) 75-102.
48. P. Vellaisamy and A.P. Punnen, Improved estimators for the selected location parameters, *Statistical Papers* 43 (2002) 291-299.
49. A.P. Punnen, Combinatorial optimization with multiplicative objective function, *International Journal Of Operations and Quantitative Management* 7 (2001) 205-209.
50. P. Vellaisamy and A.P. Punnen On the nature of binomial distribution, *Journal of Applied Probability* 38 (2001) 36-44.
51. A.P. Punnen, The traveling salesman problem: New approximation algorithms and domination analysis, *Journal of Information and Optimization*, 22 (2001) 191-206.
52. A.P. Punnen and Y.P. Aneja, An improved lower bound for the multiple bottleneck assignment problem. *European Journal of Operations Research*, 112 (1999) 167-173.
53. A.P. Punnen and K.P.K. Nair, Constrained balanced optimization problems, *Computers and Mathematics with Applications* 37 (1999) 157-163.
54. J.M. Philips, A.P. Punnen and S.N. Kabadi, A linear time algorithm for the bottleneck traveling salesman problem on a Halin graph, *Information Processing Letters*, 30 (1998) 105 - 108.
55. A.P. Punnen and K.P.K. Nair, Linear Multiplicative Programming, *Opsearch* 34 (1997) 140-154.
56. F. Glover and A.P. Punnen, The traveling salesman problem: New solvable cases and linkages with the development of approximation algorithms, *Journal of the Operational Research Society* 48 (1997) 502 - 510.
57. A.P. Punnen, On locating a single path-like facility in a general graph, *RAIRO-Operations Research* 31 (1997) 107-115.
58. A.P. Punnen and Y.P. Aneja, Minimum Dispersion Problems, *Discrete Applied Mathematics* 75 (1997) 93-102.
59. A.P. Punnen and Y.P. Aneja, On k-sum optimization problems, *Operations Research Letters* 18 (1996) 233-236.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

60. A.P. Punnen, A fast algorithm for a class of bottleneck problems, *Computing* 56 (1996) 397- 401 (short communication)
61. R.K. Ahuja, J.L. Batra, S.K. Gupta and A.P. Punnen, Optimal expansion of capacitated transshipment networks *European Journal of Operational Research* 89 (1996) 176-184.
62. A.P. Punnen and K.P.K. Nair, An $O(n \log n)$ algorithm for the max+sum spanning tree problem, *European Journal of Operational Research* 89(1996) 423-426.
63. A.P. Punnen and K.P.K. Nair, An improved algorithm for constrained bottleneck spanning tree problem, *INFORMS Journal of Computing* 8 (1996) 41-44.
64. A.P. Punnen and S.K. Bhatt, Some ratio sharing models, *Asia Pacific Journal of Operational Research* 12(1995)187-198.
65. A.P. Punnen, K.P.K. Nair and Y.P. Aneja, Generalized bottleneck problems, *Optimization* 35 (1995) 159-169.
66. I. Averbach, O. Berman and A.P. Punnen, Constrained matroidal bottleneck problem, *Discrete Applied Mathematics* 63(1995)201-214.
67. A.P. Punnen and K.P.K. Nair, Polynomial algorithms for a class of discrete minmax linear programming problems, *Journal of Operational Research Society* 46 (1995) 499 - 506.
68. A.P. Punnen and Y.P. Aneja, Minmax combinatorial optimization, *European Journal of Operational Research* 81 (1995) 634 - 643.
69. A.P. Punnen and Y.P. Aneja, A tabu search algorithm for resource constrained assignment problem, *Journal of Operational Research Society* 46 (1995) 214 - 220.
70. A.P. Punnen and K.P.K. Nair, Improved complexity bound for the bottleneck bipartite matching problem, *Discrete Applied Mathematics* 55 (1994) 91 - 93.
71. A.P. Punnen and K.P.K. Nair, A fast and simple algorithm for the bottleneck bi-connected spanning subgraph problem, *Information Processing Letters* 50 (1994) 283 - 286.
72. A.P. Punnen, On combined minmax-minsum optimization, *Computers and Operations Research* 21 (1994) 707-716.
73. A.P. Punnen and Y.P. Aneja, Categorized assignment scheduling: A tabu search approach, *Journal of Operational Research Society* 44(1993) 673-679.
74. S.K. Gupta and A.P. Punnen, Minmax linear knapsack problem with grouped variables and GUB constraints, *Optimization* 28(1993) 85-94.
75. S.K. Gupta and A.P. Punnen, Group centre and group median of a tree, *European Journal of Operational Research* 65(1993) 400-406.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

76. M.B. Richey and A.P. Punnen, Minimum weight perfect bipartite matching and spanning trees under categorization, *Discrete Applied Mathematics* 39(1992) 147-153.
77. A.P. Punnen, K-sum linear programming, *Journal of Operational Research Society* 43(1992) 89-95.
78. A.P. Punnen, Traveling salesman problem under categorization, *Operations Research Letters* 12(1992) 89-95.
79. A.P. Punnen, A linear time algorithm for the maximum capacity path problem, *European Journal of Operational Research* 53(1991) 402-404.
80. S.K. Gupta and A.P. Punnen, K-sum optimization problems, *Operations Research Letters* 9 (1990) 121-126.
81. S.K. Gupta and A.P. Punnen, Minmax linear programs with grouped variables, *Opsearch* 26 (1989) 177-186.
82. S.K. Gupta and A.P. Punnen, Group centre and group median of a network, *European Journal of Operational Research* 38 (1989) 94-98.
83. S.K. Gupta and A.P. Punnen, Minimum deviation problems, *Operations Research Letters* 7 (1988) 201-204.

Book Chapters

84. K. Malladi, S. Mitrovic-Minic, D. Karapetyan, and A. P. Punnen, Satellite Constellation Image Acquisition Problem: A Case Study, in *Space Engineering: Modelling and Optimization with Case Studies*, G. Fasano and J. D. Pinter (eds.), Springer, 2016.
85. D. Karapetyan, S. Mitrovic-Minic, K. T. Malladi and A. P. Punnen, The satellite down-link scheduling problem: A case study of RADARSAT-2. Chap. 21 in *Optimum Decision Making: Case studies of realistic applications*, K.G. Murty (ed.), Springer (2015) 497516.
86. D. Karapetyan and A. P. Punnen, An Integer Programming Model for the Ferry Scheduling Problem, Chapter 22 in *Optimum Decision Making: Case studies of realistic applications*, K.G. Murty (ed.), Springer (2015) 513-534.
87. A. P. Punnen, P. Sripratak, and D. Karapetyan, Domination analysis of algorithms for bipartite boolean quadratic programs, Springer LNCS 8070, 271-282, 2013.
88. Q. Han and A. P. Punnen, On the Approximability of Vertex Cover and Related Problems, AAIM 2010 Weihai, China, Springer LNCS 6124, 161-169, 2010.
89. J. B. Orlin, A.P. Punnen and A. Schulz, Integer programming: Optimization and evaluation are equivalent. Book chapter, Springer LNCS, Proceedings of WADS 2009.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

90. S.N. Kabadi and A.P. Punnen, Anti-stalling pivot rule for linear programs with totally unimodular coefficient matrix, Book Chapter in, *Mathematical Programming and Game Theory for Decision Making*, S. K. Neogy, R. B. Bapat, A. K. Das and T. Parthasarathy (editors), World Scientific Press, 2008
91. R.K. Ahuja, O. Ergun, J.B. Orlin, and A.P. Punnen, Very Large Scale Neighborhood Search: Theory, Algorithms and Applications, *Approximation Algorithms and Metaheuristics*, T. Gonzalez (ed), CRC Press, 2007.
92. A.P. Punnen, Computational Complexity, Appendix In *The traveling salesman problem and its variations* Kluwer Academic Publishers, 2002.
93. A. Lodi and A.P. Punnen, TSP Software, In *The traveling Salesman Problem and its variations*, Kluwer Academic Publishers, (2002).
94. S.N. Kabadi and A.P. Punnen, The Bottleneck Traveling Salesman Problem, In *The Traveling Salesman Problem and its variations*, Kluwer Academic Publishers, (2002).
95. A.P. Punnen, The traveling salesman problem: Formulations, Applications and Variations”, In *The traveling Salesman Problem and its variations*, Kluwer Academic Publishers, (2002).
96. R.K. Ahuja, O. Ergun, J.B. Orlin, A.P. Punnen, Very large scale neighborhood search, in *Discrete Optimization: The state of the art*, E Bores and Hammer PL (eds) 2001.

Papers Submitted for Publication

97. A.P. Punnen and Y. Wang, The bipartite quadratic assignment problem and extensions, under revision for *European Journal of Operational Research*.
98. P. Pandey and A.P. Punnen, On a linearization technique for solving quadratic set covering problem and variations, under revision for *Optimization*.
99. B. Woods, A.P. Punnen, T. Stephen, k-neighbor TSP on a Halin graph

Papers Under Preparation

100. A. Custic and A. P. Punnen, A characterization of linearizable instances of the quadratic minimum spanning tree problem
101. Y. Wang, S. Minic, R. Leitch, and A. P. Punnen, Image acquisition scheduling of resident space objects.
102. R. Zhang, A. Custic, and A.P. Punnen, Quadratic spanning trees: complexity and solvable cases.
103. A. P. Punnen, J. Tian, W. Lin, A. Yin, and G. Zhang, The multiplicative assignment problem and its variations.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

104. Y. Wang and A.P. Punnen, The Boolean quadratic programming problem with generalized upper bound constraints
105. X. Shen and A. P. Punnen, The path selection problem in network design.
106. K.T. Malladi, S. Minic, and A.P. Punnen, A metaheuristic algorithm for the cluster restricted maximum weight clique problem.
107. D. Karapetyan and A. P. Punnen, Heuristic algorithms for the bipartite unconstrained 0-1 quadratic programming problem.
108. R. Zhang, T. Oncan and A.P. Punnen, Quadratic bottleneck assignment problem.
109. S. Mitrovic-Minic and A.P. Punnen, A mixed integer programming model and algorithm for scheduling a re-configurable fleet of heterogenous ferries.

Other Research Reports

110. A.P. Punnen and D. Karapetyan, Fleet size planning and scheduling of passenger ferry operations linking Texada, Powell River, and Comox, (180 pages), 2013.
111. A.P. Punnen and D. Karapetyan, Fleet size planning and scheduling of passenger ferry operations linking Texada, Powell River, and Comox - Summary report (69 pages), 2013.
112. A.P. Punnen, D. Karapetyan, P. Pandey, Analysis of Fleet Configurations and Scheduling for the BC Ferries Operations in Southern Gulf Islands, (452 pages), 2012.
113. D. Karapetyan, K. T. Malladi, S. Mitrovic-Minic, and A.P. Punnen, Satellite Downlink Scheduling, (40 pages), 2012.
114. A. P. Punnen, The path selection problem and optimal pricing, (31 pages) 2011.
115. A. Kaveh and A.P. Punnen, Randomized local search and improved solutions for the microarray QAP, 2008.
116. S. Mitrovic-Minic and A.P. Punnen, Scheduling of Ferry Operations in Southern Gulf Islands by BC Ferries, 2007.
117. J. Christie, D. Du, A.P. Punnen, S. Satir, D. David, Transportation Scheduling at Day & Ross: Line haul operations. Final Report of contract research, 2006 (200 pages)
118. J. Christie, A.P. Punnen, S. Satir, Transportation Scheduling at Day & Ross, Interim report, 2006. (80 pages)
119. A.P. Punnen and F. Glover, Ejection chains and combinatorial leverage for the traveling salesman problem, Research report, 1999.
120. A.P. Punnen and Y.P. Aneja, Randomized local search, Research report, 1993.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

Books

121. G. Gutin and A.P. Punnen, (editors), The Traveling Salesman problem Kluwer Academic Publishers, 2002
122. A.P. Punnen, Linear Programming and Network Models, (under preparation)

Software

123. J. LaRusic, E. Aubanel, AP Punnen, Arrow 0.1b - Software for solving Bottleneck Traveling Salesman problem, Released beta version, December 2006, available free for research use under GNU Public license and could be downloaded from Sourceforge. (For commercial use contact authors for licensing.)
124. A. Kaveh and A. P. Punnen, QAP-RANDLR: A heuristic QAP solver.
125. A.P. Punnen, A software library for combinatorial optimization, 1990, IIT Kanpur

Online Survey - Periodically updated

126. A. Lodi, A.P. Punnen and M. Boccafoli, TSP Software, http://www.or.deis.unibo.it/research_pages/tspsoft.html.
Most recent update: January 2007.

Books Reviews

127. A.P. Punnen, Local search in Combinatorial Optimization by Emile Aarts and J K Lenstra (eds) *Interfaces*
128. A.P. Punnen, Interactive Operations Research with MAPLE, by M. Parlar, *INFOR* 40 (2002) 173-174.
129. A.P. Punnen Postoptimal Analysis, Parametric Programming and Related topics by Thomas Gal, *Interfaces*, 1997.
130. A.P. Punnen Interior point approach to linear, quadratic, and convex programs by D. den Hertog, *Interfaces* 25 (1995) 132-133.

Journal Special Issues Edited

131. J.R. Birge and A.P. Punnen (editors) In memory of George B. Dantzig, Special issues of *Algorithmic Operations Research* 2006.
132. G. Gutin and A.P. Punnen (editors) Variations of the Traveling salesman problem, Special issue of *Discrete Optimization* 2005.
133. A.P. Punnen and P. Sharma (editors) Combinatorial Optimization, Special issue of *Journal of Applied Mathematics and Decision Sciences*, 2005.
134. G. Gutin and A.P. Punnen (editors) Foundations of Heuristics in Combinatorial Optimization, Special issue of *Discrete Applied Mathematics*, 2002.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

135. A.P. Punnen (editor), Traveling Salesman Problem, Special issue of *Computers and Operations Research*, 26 (1999).

Conference Presentations

(Variations of most of these presentations appeared as journal publications listed above. Many presentations are done by co-authors)

136. A. Ćustić and A. P. Punnen, Linearizable quadratic minimum spanning tree problems and related polynomially solvable special cases, ECCO 2015, Catania, Italy.
137. A. Rafiey, V. Sokol, R. Krishnamurti, S. Mitrovic Minic, A. P. Punnen and K. T. Malladi, A Network Model for the Hospital Routing Problem, ICORES 2015, Lisbon, Portugal.
138. K. T. Malladi, S. Mitrovic Minic, A. Rafiey, R. Krishnamurti, A. P. Punnen, Courier Routing for Hospital Labs, IFORS 2014, Barcelona.
139. Y. Wang and A. P. Punnen, Binary quadratic programs with GUB constraints, IFORS 2014, Barcelona.
140. Y. Wang and A. P. Punnen, Bipartite 0-1 quadratic programming problem with Partitioned Variables, CORS 2014, Ottawa.
141. D. Karapetyan and A. P. Punnen, Fleet size planning and schedule optimization for the British Columbia Ferry Services Inc., CORS 2014, Ottawa.
142. P. Sripratak, A. P. Punnen, and D. Karapetyan, Complexity and solvable cases of the bipartite Boolean quadratic programs, CORS 2014, Ottawa.
143. X. Shen, A. P. Punnen, and D. Karapetyan, Path Selection Problem in network design, CORS 2014, Ottawa.
144. A. P. Punnen, P. Sripratak, and D. Karapetyan, Domination analysis of algorithms for bipartite boolean quadratic programs, FCT 2013, Liverpool, UK.
145. D. Karapetyan and A. P. Punnen, An efficient approach to ferry scheduling and fleet optimization problems, CORS Vancouver, 2013.
146. K. T. Malladi, S. Mitrovic-Minic, D. Karapetyan, and A. P. Punnen, Satellite Image Acquisition Scheduling Problem: A case study with RADARSAT Constellation, CORS Vancouver, 2013.
147. D. Karapetyan, K. T. Malladi, S. Mitrovic-Minic, and A. P. Punnen, An Algorithm for the Satellite Downlink Scheduling Problem, CORS 2012, Niagara Falls.
148. R. Zhang, T. Oncan, and A.P. Punnen, Quadratic Bottleneck Assignment Problem and its applications, CORS 2012, Niagara Falls.
149. S. Taghipour, A. P. Punnen, and B. Bhattacharyya, Quadratic balanced optimization problem, CORS 2012, Niagara Falls.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

150. S. Mitrovic-Minic and A.P. Punnen, Routing and scheduling of a heterogeneous fleet of re-configurable ferries: a model, a heuristic, and a case study, OR 2011 - International Conference on Operations Research, Zurich, Switzerland, 2011.
151. B. Woods and A.P. Punnen, Optimization Problems on Halin Graphs, ALIO/INFORMS International 2010, Buenos Aires, Argentina.
152. S.N. Kabadi and A.P. Punnen, The minimum spanning cactus problem: complexity, approximation and cactus extension, CORS/MITACS Edmonton, 2010.
153. R. Zhang and A.P. Punnen, Quadratic bottleneck spanning tree problem, CORS/MITACS Edmonton, 2010.
154. R. Zhang, S.N. Kabadi and A.P. Punnen, Minimum spanning tree problem with conflict constraints, CORS/INFORMS 2009.
155. J. LaRusic and A.P. Punnen, Computational study of heuristics for the asymmetric and constrained bottleneck TSP, CORS/INFORMS, 2009.
156. A. Kaveh and A.P. Punnen, Experimental analysis of heuristics for three dimensional assignment and transportation problems, CORS/INFORMS 2009.
157. B. Woods, N. Belacel, and A. P. Punnen, Optimization problems on variations of Halin graphs, CORS/INFORMS 2009.
158. R. Zhang, S.N. Kabadi and A.P. Punnen, Conflict graphs and the minimum spanning tree problem, MITACS conference, Fredericton, NB 2009.
159. J. B. Orlin, A.P. Punnen and A. Schulz, Integer programming: Optimization and evaluation are equivalent. WADS 2009, Banf, Canada.
160. T. Oncan and A.P. Punnen, The Quadratic Minimum Spanning Tree Problem: A Lower Bounding Procedure and an Efficient Search algorithm, INOC 2009, Italy.
161. S. Mitrovic-Minic and A.P. Punnen, Variable intensity local search. matheuristics 2008, Italy, August 2008.
162. D.K. Benvenuti and A.P. Punnen, Weighted graphs with constant Hamiltonian cycle cost, CORS 2007, London, Ontario.
163. J. LaRusic, E. Aubanel, and A.P. Punnen, Experimental results from Arrow: A bottleneck TSP solver, CORS 2007, London, Ontario.
164. R. Zhang and A.P. Punnen, Quadratic bottleneck optimization problems, CORS 2007, London, Ontario.
165. S.N. Kabadi and A.P. Punnen, Anti-stalling pivot rule for linear programs with totally unimodular coefficient matrix, Symposium on Mathematical Programming for Decision Making: Theory and Applications (ISMPDM07), ISI Delhi, January 10-11, 2007.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

166. R. Zhang and A.P. Punnen, Bottleneck Flows in networks, *SIAM Discrete Mathematics Conference*, Victoria, 2006.
167. R. Zhang and A.P. Punnen, Unit capacity bottleneck flows, *CORS* Montreal, 2006
168. S.N. Kabadi and A.P. Punnen, Characterization of Cost Matrices with Two and Three Distinct Values of Hamiltonian Tour Costs, *ORSI 2005*, Ahmedabad, India.
169. J. LaRusic, E. Aubanel, A.P. Punnen, Efficient heuristics for the bottleneck TSP, *CORS* Halifax, 2005.
170. P. Panday and A.P. Punnen, Simplex Algorithms for Piecewise-linear fractional programs, *CORS* Halifax, 2005.
171. J.B. Orlin, A.P. Punnen, A. Schulz, Approximate local search in Combinatorial Optimization. *15th Annual ACM-SIAM Symposium on Discrete Algorithms*, New Orleans, January, 2004.
172. J.B. Orlin, A.P. Punnen, A. Schulz, Approximate local search in combinatorial optimization, *ISMP* Copenhagen, Denmark, August 2003.
173. J.B. Orlin, A.P. Punnen, A.Schulz, Approximate Local Search, *Workshop on Combinatorial Optimization*, Paris, France, 2003.
174. A.P. Punnen, Domination analysis of heuristics in Combinatorial optimization, *CORS* 2002.
175. F Glover, C. Rego and A.P. Punnen, Advances in Ejection Chain Methods for the Traveling Salesman Problem, *INFORMS Annual International Meeting*, San Jose, California, November, 2002.
176. S.N. Kabadi and A.P. Punnen, Bottleneck TSP: Solvable cases and approximation algorithms, *CORS* 2001.
177. R. Ramakrishnan, A.P. Punnen, and P. Sharma, Exact and approximate algorithms for the bottleneck TSP. *ORSI* Ahammadbad, December 2000.
178. A.P. Punnen, Domination analysis of construction heuristics for the TSP, *INFORMS* Philadelphia, October 1999.
179. R.K. Ahuja, O. Ergun, J.B. Orlin, A.P. Punnen, Very large scale neighborhood search, *INFORMS* Philadelphia, October 1999.
180. R.K. Ahuja, O. Ergun, J.B. Orlin, A.P. Punnen, Neighborhood search made difficult, *DO99*, Rutgers University. June 1999.
181. A.P. Punnen, Y.P. Aneja, and K.P.K. Nair, Domination analysis of TSP heuristics: a survey and some new results, *IFORS*, Beijing August 1999.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

182. A.P. Punnen, Some counting problems in the Analysis of Algorithms, *Combinatorics Workshop*, MUN, Newfoundland, May 1999.
183. S.N. Kabadi and A.P. Punnen, Minimum weight Hamiltonian paths in a Halin graph and related problems, *CORS* Windsor, June 1999.
184. A.P. Punnen and S.N. Kabadi, Domination analysis of some heuristics for the traveling salesman problem. *INFORMS* 1999, Cincinnati, Ohio.
185. A.P. Punnen, Efficient heuristics for the traveling salesman problem, *SQC-OR*, ISI Madras, 1998.
186. A.P. Punnen, S.N. Kabadi, and J.M. Phillips, A linear time algorithm for bottleneck TSP on a Halin graph and extensions, *INFORMS/CORS* Montreal, April 1998.
187. A.P. Punnen, Y.P. Aneja and K.P.K. Nair, Capacity leasing for Spanning Trees, *POMS 1998*, Cape Town, South Africa, June, 1998.
188. A.P. Punnen and Y.P. Aneja, Heuristics for the price collecting traveling salesman problem. *APORS* Australia, November 1997.
189. A.P. Punnen and K.P.K. Nair, Efficient heuristics for the optimum communication spanning tree problem and its variations, *APORS* Australia, November 1997.
190. A.P. Punnen, New domination results and related heuristics for the traveling salesman problem *International Symposium on Mathematical Programming*, Switzerland, August 1997.
191. A.P. Punnen and K.P.K. Nair, On capacitated stochastic spanning tree problem in a network. *CORS*, Ottawa May 1997.
192. S.N. Kabadi and A.P. Punnen, Traveling salesman problem with two distinct tour values, *SIAM conference on Optimization*, Victoria, B.C., May 1996.
193. S.N. Kabadi and A.P. Punnen, Prize-Collecting traveling salesman problem, *INFORMS* Washington DC May, 1996.
194. S.N. Kabadi and A.P. Punnen, Constant TSP revisited, *Optimization Days*, Montreal May, 1996.
195. A.P. Punnen, Domination analysis of heuristics and the prize collecting traveling salesman problem, *ACORS* Halifax, 1995.
196. A.P. Punnen and Y.P. Aneja, A unified approach for certain combinatorial optimization problems, *INFORMS* Singapore 1995.
197. A.P. Punnen and K.P.K. Nair, Discrete bottleneck linear programs and extensions, *INFORMS* Singapore, 1995.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

198. A.P. Punnen and K.P.K. Nair, Constrained balanced optimization problems, *CORS* Calgary, 1995.
199. A.P. Punnen and K.P.K. Nair, Linear multiplicative programming, *ORSI* Calcutta, 1994.
200. A.P. Punnen and F. Glover, TSP revisited: New heuristics with combinatorial leverage of exponential power, *ORSA/TIMS* Detroit, 1994.
201. Y.P. Aneja and A.P. Punnen, Multiple bottleneck assignment and transportation problems, *TIMS/ORSA* Boston 1994.
202. A.P. Punnen and K.P.K. Nair, A fast and simple algorithm for the bottleneck bi-connected spanning subgraph problem, *CORS* Montreal 1994.
203. A.P. Punnen and K.P.K. Nair, Balanced Optimization and Extensions, *ORSA/TIMS* Phoenix, Arizona October, 1993.
204. A.P. Punnen and Y.P. Aneja, Randomized local search algorithms, *TIMS/ORSA* Chicago, 1993.
205. A.P. Punnen and Y.P. Aneja, On k-sum optimization problems, *CORS* Halifax 1992.
206. A.P. Punnen and K.P.K. Nair, An improved algorithm for the constrained bottleneck spanning tree problem, *CORS* Halifax, 1992.
207. S.K. Gupta and A.P. Punnen, Group centre and group median of a tree, *ORSI* Trivandrum, 1989.

Section IV - Service

#	Status	Name of the Committee	Year	Location
1	Member	Senate Committee on Disciplinary Appeals	2015-2017	SFU
2	Vice-chair	Senate Committee on Disciplinary Appeals	2013-2015	SFU
3	Member	Advisory Council, SFUFA	2012-2013	SFU
4	Member	TPC, Mathematics Department	2011	SFU
5	Vice-chair	Senate Committee on Disciplinary Appeals	2009-2012	SFU
6	Member	Senate Committee on Disciplinary Appeals	2007-2015	SFU
7	Member	Steering Committee, CORDS	2006 - 2013	SFU
8	Member	Steering committee, MSSC Program	2007 - no term	SFU
9	Member	Joint committee, student progress monitoring (mechatronics program)	2007	SFU
10	Director	Centre for Operations Research and Decision Sciences (CORDS)	2006-2009	SFU

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

11	Member	ALRP committee, Mathematics	2005-2007	SFU
12	Member	Graduate Studies Committee	2005-2009	SFU
13	Member	SFU India Working group	2005- 2008	SFU
14	Co-advisor	Industrial Mathematics Program	2005-2008	SFU
15	Member	Senate Honorary degrees committee	2004 - 2005	UNB
16	Director	Mathematics and Statistics GAU	2002-2004	UNB
17	Member	Department curriculum committee	2001 - 2003	UNB
18	Member	Department nominating committee	2001 - 2002	UNB
19	Member	Level - I Assessment committee	2001 - 2003	UNB
20	Member	Level-II Assessment committee	2001 - 2003	UNB
21	Member	Senate Library Committee	1998 - 2001	UNB
22	Member	Department Chair search committee	1999 - 2000	UNB
23	Member	GAU Executive Committee	1996-2000	UNB
24	Member	Department Library Committee	1998-2000	UNB
25	Member	Chair Search Committee	1998	UNB
26	Member	Vice-president's Excellence in Teaching Committee	1996-1998	UNB
27	Member	Committee on WWW Policy and guidelines	1997	UNB
28	Member	Level - I Assessment committee	1996 - 1997	UNB
29	Chair	Senate Curriculum Committee	1996-1997	UNB
30	Member	Senate Curriculum Committee	1995 - 1998	UNB
31	Chair	SASE Nominating Committee	1998 - 1999	UNB
32	Member	SASE Nominating Committee	1995 -1998	UNB
33	Member	MSCS Nominating Committee	1996-1998	UNB
34	Member	MSCS Public Relations Committee	1994-1995	UNB
35	Member	MSCS Nominating Committee	1994-95	UNB
36	Member	MSCS Curriculum committee	1994 - 1998	UNB

Membership in Professional Societies

1. Operations Research Society of India (Life Member)
2. Institute for Operations Research and Management Science
3. Canadian Operational Research Society
4. Canadian Institute of Mining, Metallurgy and Petroleum

Refereeing

1. Refereed research grant applications for Swiss National Science Foundation, MSFHR, MITACS, NSERC CRD projects, and NSERC discovery .
2. Referred papers various journals including: Transportation Science, Optimization, Computers and Operations Research, Information Processing Letters, Operations Research Letters, Naval Research Logistics, Discrete Applied Mathematics, IJOQM, Annals of

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

Operations Research, Operations Research, Networks, Management Science, Journal of heuristics, International Transactions in Operations Research, JAMDS, European Journal of Operational Research, Computers and Industrial Engineering

Other service activities - Conferences

#	Status	Conference	Location	Year
1	Program Chair	CORS Annual Conference	Vancouver	2013
2	Local Organizations	CORS Annual conference	Vancouver	2013
3	Member	Scientific Committee, International conference on swarm intelligence	France	2011
4	Organizer	Operations Research and Computing cluster, CORS conference	Newfoundland	2011
5	Co-organizer	WCOM	SFU	2009
6	Organizer	Discrete Optimization Cluster, CORS conference	Laval	2008
7	Organizer	Second international symposium on Algorithmic operations research	SFU	2007
8	Organizer	First international operations research case competition	SFU	2007
9	Organizer	Discrete Optimization Cluster (4 sessions), CORS conference	London Ontario	2007
10	Co-organizer	Geometrically-Constrained Resource Allocation Session, MITACS-CMS joint meeting	Winnipeg	2007
11	Co-organizer	Combinatorial optimization cluster (6 sessions), CORS Conference	Montreal	2006
12	Organizer	First international symposium on Algorithmic operations research	SFU	2006
13	Member	Organizing Committee, AARMS workshop on Combinatorial designs	Newfoundland	1999
14	Member	International advisory board, ICOQM	India	1999
15	Member	International advisory committee, APMOD, Brunel University	UK	2000
16	Chair	Local organizations, CMS Summer conference	Saint John	1998
17	Co-organizer	Discrete Mathematics session at CMS Summer conference	Saint John	1998
18	Co-organizer	Five sessions at the International Symposium on Mathematical Programming	Switzerland	1997
19	Organizer	Session on Bottleneck Optimization, INFORMS International	Singapore	1999

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

Editorial Activities

#	Position	Journal	Year
1	Editor-in-chief	Algorithmic Operations Research	2005-2012.
2	Associate Editor	International Abstracts in Operations Research	2002-2007
3	Area Editor	International Journal of Operations and Quantitative Management	1998-2005
4	Associate Editor	Journal of Applied Mathematics and Decision Sciences	1999-2005
6	Member	Editorial Advisory board, Computers & Operations Research	1998-2002

Other service activities - External Committees/ Assessment

#	Status	Committee	Year
1	External reviewer	Promotion assessment, University of Lethbridge	2015
2	External reviewer	Promotion assessment, University of Windsor	2013
3	Vice President	CORS Vancouver Chapter	2012-2013
4	External reviewer	Promotion and tenure assessment, New Mexico State University	2011
5	External reviewer	Promotion assessment, University of New Brunswick	2008
6	External reviewer	Tenure assessment, University of Windsor	2006
7	External reviewer	Promotion and tenure assessment, University of Windsor	2004
8	Member	Board of Directors, Canadian Mathematical Society	2001 - 2003
9	Member	Canadian Mathematical Society, Education Committee	2000-2003
10	Member	Subcommittee of Education Committee of Canadian Mathematical Society on provincial competitions	2000 - 2003
11	Member	APICS Mathematics Competition, Examination Committee,	1998
12	Provincial Coordinator	(jointly with M.Kamel) for the First Maritime Mathematics Competition for High school students, New Brunswick	1997

Section V - Awards

1. NSERC Discovery accelerator supplement award, 2015.
2. CORS practice prize (2nd place), 2014.

Curriculum Vitae

Abraham P. Punnen | Tuesday 29th September, 2015 | <http://www.sfu.ca/~apunnen/>

3. NSERC Discovery accelerator supplement award, 2010.
4. Best theory paper award at ORSI Annual conference, 2005.
5. Merit Award, UNB Saint John, 1996.
6. CORE Fellowship, Universite Catholique de Louvain, Belgium, 1990.