# CURRICULUM VITAE

**NAME:** PETRICĂ CLAUDIU POP SITAR
**DATE AND PLACE OF BIRTH:** 1972 October 30, Baia Mare, ROMANIA
**CITIZENSHIP:** Romanian
**MARITAL STATUS:** married
**DEPENDENTS:** POP SITAR CORINA ELENA, wife, 1975 May 2,
POP SITAR ANA-MARIA, daughter, 2003 September 21.

**HOME ADDRESS:**
Tiblesului No. 35
RO-4800, BAIA MARE, ROMANIA
E-mail: pop_petrica@yahoo.com

**MANAGEMENT EXPERIENCE**

- 2008 - **Chair Head**, Chair of Informatics and Applied Mathematics, Department of Mathematics and Computer Science, Faculty of Sciences, North University of Baia Mare, Romania

**RESEARCH INTEREST**

- Operations Research; Mathematical Programming; Combinatorial Optimization;
- Optimization; Mathematical modelling; Graph theory; Natural Computing;
- Theory of algorithms, heuristic and metaheuristics algorithms.

**STUDIES**

1998-2002 Dept. of Operations Research, Faculty of Applied Mathematics, University of Twente, the Netherlands;
**PhD degree**: Operations Research;
Thesis title: The Generalized Minimum Spanning Tree Problem;
Supervisors: Prof. Dr. U. Faigle and Prof. Dr. G. Woeginger.

1997-1998 Dept. of Operations Research, Faculty of Applied Mathematics, University of Twente, the Netherlands;
**Master degree**: Operations Research (graduated with very good and excellent qualificatives);
Thesis title: Semidefinite Programming and its Applications to Combinatorial Optimization.

1995-1996 Dept. of Mathematical Analysis, Faculty of Mathematics and Computer Science, Babes-Bolyai University of Cluj-Napoca, Romania;
**Master degree**: Convex Analysis and Approximation, (graduated with 10);
Thesis title: Optimal Maintenance of Machines.

1991-1995 Faculty of Mathematics and Computer Science, Babes-Bolyai University of Cluj-Napoca, Romania;
**Bachelor degree**: Mathematics (graduated with 9.73).

1987-1991 "Gheorghe Sincai" Highschool, Baia Mare, Romania.

1979-1987 "Nichita Stanescu" Primary and Secondary School, Baia Mare, Romania.

## PROFESSIONAL EXPERIENCE

- October 2006 - Associate Professor
  Dept. of Mathematics and Computer Science, Faculty of Sciences, North University of Baia Mare, Romania.
- August 2005 - November 2005
  Post Doctoral Researcher within ADONET (Algorithmic Discrete Optimization Network), Technische Universitat Wien, Austria.
- February 2003 - February 2004
  Post Doctoral Researcher within AMORE (Algorithmic Methods for Optimizing the Railways in Europe) network, Computer Technology Institute, University of Patras, Greece.
- January 2003 - October 2006
  Lecturer, Dept. of Mathematics and Computer Science, Faculty of Sciences, North University of Baia Mare, Romania.
- September 1998 - September 2002
  Research Assistant, Dept. of Operations Research, Faculty of Applied Mathematics, University of Twente, the Netherlands.
- January 1999 - Assistant, North University of Baia Mare, Romania.
- September 1996 - Junior assistant, Babes-Bolyai University of Cluj-Napoca and North University of Baia Mare, Romania,

## TEACHING EXPERIENCE

- Combinatorial Optimization (2005), Master progam, Technical University of Vienna, Austria.
- Special Chapters of Mathematical Analysis (2005 - ), Master program, North University of Baia Mare, Romania;
- Numerical methods for solving optimization problems (2006 - ), Master program, North University of Baia Mare, Romania;
- Artificial Inteligence, (2004-2005, 2007 - );
- Operations Research (2003 - );
- Functional Analysis (2004 - );
- Convex Analysis, Mathematical Programming (2004-2005);
- Mathematical Modelling and Simulation (2004 - );

## SCHOLARSHIPS

- ICIAM grant, Austrian Academy of Sciences, Johan Radon Institute for Computational and Applied Mathematics, Linz, Austria, Iulie, 2007.
- August 2004 - October 2004
  Consiglio Nazionale delle Ricerche - NATO Senior fellowship, Ist. Applicazioni del Calcolo "M. Picone", Bari, Italy.
- Scholarship in every year of Bachelor and Master studies based on the grades obtained.
- Tempus scholarship, "Pierre et Marie Curie" University, Paris VI, France, 1 May - 1 August, 1996.
- CNRS (Centre National de la Recherche Scientifique) scholarship, "Pierre et Marie Curie" University, Paris VI, France, January 1997.
- Scholarship for Master students from Mathematical Research Institute, the Netherlands, September 1997 - June 1998.
- Summer school on "Probability and Statistics", July 1999, Cortona, Italy.
- Winter school on "New Methods in Combinatorial Optimization, March 2000, Alpe d'Huez, France.
- Summer school on Operations Research "Network Flows", August 2000, Cortona, Italy.

## INVITED TALKS AND VISITING POSITIONS

- Visiting researcher, Department of Computing and Software, McMaster University, Hamilton, Ontario, Canada, March - May 2001.
- Invited talk, The Generalized Minimum Spanning Tree Problem, McMaster University, Hamilton, Ontario, Canada, April, 2001.
- Invited talk, Approximation Results for the Generalized Minimum Spanning Tree Problem, University of Patras, Patras, Greece, June 2002.
- Invited talk, Solving the Generalized Minimum Spanning Tree Problem with Simulated Annealing, Technische Universitat Wien, Austria, April 2005.
- Visiting Professor - Teacher Mobility, University of Applied Sciences, Vienna, Austria, May, 2006.
- Visiting researcher, LABORATOIRE JACQUES-LOUIS LIONS (UMR 7598), Pierre et Marie Curie University, Paris, France, November 2006.
- Visiting researcher, Algorithms and Data Structures Group, Technical University of Vienna, Austria, April, 2007.
- Visiting researcher, Johann Radon Institute, Linz, Austria, July, 2007.
- Visiting researcher, LABORATOIRE JACQUES-LOUIS LIONS (UMR 7598), Pierre et Marie Curie University, Paris, France, June 2008.
- Visiting researcher, Department of Mathematics, International Centre for Theoretical Physics, Trieste, Italy, March 2009.

## PUBLICATIONS

1. **P.C. Pop**, O. Matei, C. Pop Sitar, C. Chira, A Genetic Algorithm for Solving the Generalized Vehicle Routing Problem, to appear in Proc. of 5-th Int. Conf. on Hybrid Artificial Intelligence Systems, San Sebastian, Spain, *Lecture Notes in Computer Science*, 2010.

2. **P.C. Pop**, C. Pop Sitar, I. Zelina, V. Lupse and C. Chira, Heuristic Algorithms for Solving the Generalized Vehicle Routing Problem, to appear in *International Journal of Computers, Communications & Control* (IJCCC), 2010.

3. C-M.Pintea, C.Chira, D.Dumitrescu and **P.C. Pop**, Sensitive Ants in Solving the Generalized Vehicle Routing Problem, to appear in *International Journal of Computers, Communications & Control* (IJCCC), 2010.

4. **P.C. Pop**, A survey of different integer programming formulations of the generalized minimum spanning tree problem, *Carpathian Journal of Mathematics*, Vol. 25, No. 1, pp. 104-118, 2009.

5. **P.C. Pop**, C. Pop Sitar, A. Horvat Marc and I. Zelina, A local-global approach to the Generalized Minimum Spanning Tree Problem, *Analele Universitatii din Timisoara, seria Matematica-Informatica*, Fasc. 2, Vol. XLVII, pp. 117-126, 2009.

6. **P.C. Pop**, C.M. Pintea, I. Zelina and D. Dumitrescu, Solving the Generalized Vehicle Routing Problem with an ACS-based Algorithm, *American Institute of Physics*, Proc. of the Bio-Inspired Computational Methods Used for Difficult Problems Solving. Development of Intelligent and Complex Systems, Tg. Mures, 5-7 November 2008, Vol. 1117, pp. 157-162, 2009.

7. **P.C. Pop**, C. Pintea and D. Dumitrescu, An Ant Colony Algorithm for Solving the Dynamic Generalized Vehicle Routing Problem, in Proc. of 5th International Conference 2009 - Dynamical Systems and Applications, June 15-18, Constanta, Romania, Ovidius University Annals Series: Civil Engineering, Vol.1 (11), pp. 373-382, 2009.

8. **P.C. Pop**, Efficient Transformations of the Generalized Combinatorial Optimization Problems into Classical Variants, 9-th Balkan Conference on Operational Research BALCOR 2009, 2-6 September, Constanta, Romania.

9. N. Pop, L. Vladareanu and **P.C. Pop**, Finite Element Analysis of Quasistatic Frictional Contact Problems with an Incremental-Iterative Algorithm, Advanced Applications of Electrical Engineering, Proc. of the 8-th International Conference on Applications of Electrical Engineering, pp. 173-178, Houston, USA, April 30 - May 2, 2009.

10. A. Horvat Marc and **P.C. Pop**, Localization of positive solutions via nonnegative concave functionals, Proc. of the 13-th International Conference on Computers, pp. 175-178, Rhodos, Greece, July 23-25, 2009.

11. **P.C. Pop**, C.D. Zaroliagis and G. Hadjicharalambous, A cutting plane approach to solve the railway traveling salesman problem, *Studia Univ. "Babes-Bolyai", Mathematica*, Volume LIII, Number 1, pp. 63-73, March 2008.

12. Camelia-M. Pintea, **Petrica C. Pop**, Camelia Chira, D. Dumitrescu, A Hybrid Ant-based System for Gate Assignment Problem, in Proceedings of the 3-rd International Workshop on Hybrid Artificial Intelligence Systems, Burgos, Spain, *Lecture Notes in Computer Science*, Vol. 5271, pp. 273-280, 2008.

13. Camelia-M. Pintea, Camelia Chira, D. Dumitrescu, and **Petrica C. Pop**, A Sensitive Metaheuristic for Solving a Large Optimization Problem, in Proceedings of the SOFSEM Conference, Nov Smokovec, High Tatras, Slovakia, *Lecture Notes in Computer Science*, Vol. 4910, pp. 551-559, 2008.

14. C.M. Pintea, D. Dumitrescu and **P.C. Pop**, Combining heuristics and modifying local information to guide ant-based search, *Carpathian Journal of Mathematics*, Vol. 24, No. 1, pp. 94-103, 2008.

15. **Petrică C. Pop**, Corina Pop Sitar, Ioana Zelina, Ioana Tascu, On the generalized minimum spanning tree problem (extended abstract), International Symposium on Combinatorial Optimization, Coventry, UK, pp. 65-67, 2008.

16. **Petrica C. Pop**, A Strong Integer Programming Formulation of the Generalized Traveling Salesman Problem, (extended abstract), International Symposium on Combinatorial Optimization, Coventry, UK, pp. 67-69, 2008.

17. I. Zelina, G. Moldovan and **P.C. Pop**, Some Communication Aspects in Extended Fibonacci Cubes, IEEE Proceedings of International Symposium on Applications and the Internet, pp. 245-248, *IEEE Computer Society Press*, Turku, Finland, July 28 - August 1, 2008.

18. **P.C. Pop**, On the Prize-Collecting Generalized Minimum Spanning Tree Problem, *Annals of Operations Research*, Vol. 150, No. 1, pp. 193-204, Kluwer Academic Publications, 2007.

19. **P.C. Pop**, New Integer Programming Formulations of the Generalized Travelling Salesman Problem, *American Journal of Applied Sciences*, Vol. 4(11), pp. 932-937, Science Publications, 2007.

20. C. Pintea, **P.C. Pop** and C. Chira, The Generalized Travelling Salesman Problem Solved with Ant Algoritms, *Journal of Universal Computer Science*, Vol. 13, No. 7, pp. 1065-1075, 2007.

21. **P.C. Pop**, C. Pop Sitar, I. Zelina and I. Tascu, Exact Algorithms for Generalized Combinatorial Optimization Problems, Proceedings of the COCOA Conference, Xi'an, China, *Lecture Notes in Computer Science*, Vol. 4616, pp. 154-162, Springer Verlag, 2007.

22. **P.C. Pop**, C. Pintea and C. Pop Sitar, An ant colony based approach to the Railway Travelling Salesman Problem, Proceedings of the EVO Conference, Valencia, Spain, *Lecture Notes in Computer Science*, Vol. 4448, pp. 702-711, Springer Verlag, 2007.

23. G. Hadjicharalambous, **P.C. Pop**, E. Pyrga, G. Tsaggouris and C.D. Zaroliagis, The Railway Travelling Salesman Problem, *Lecture Notes in Computer Science*, Vol. 4359, pp. 264-275, 2007, Springer Verlag.

24. **P.C. Pop**, C. Pintea, C. Pop Sitar and D. Dumitrescu, A Bio-Inspired Approach for a Dynamic Railway Problem, IEEE Proceedings of the 9th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, pp. 449-453, *IEEE Computer Society Press*, Timisoara, Romania, September 26-29, 2007.

25. **Petrică Pop**, Corina Pop Sitar, Nicolae Pop and Ioana Zelina, A Local-global Approach to Generalized Network Design Problems, *WSEAS Transactions on Computer Research*, Issue 2, Vol. 2, pp. 220-227, 2007.

26. C. Pintea, **P. Pop** and D. Dumitrescu, An Ant-based technique for Dynamic Generalized Travelling Salesman Problem, Proceedings of 7th WSEAS International Conference on Systems Theory and Scientific Computation, Athens, Greece, pp. 255-259, 2007.

27. **Petrică Pop**, Corina Pop Sitar Nicolae Pop and Ioana Zelina, A New Approach to Generalized Network Design Problems, Proceedings of 6th WSEAS International Conference, Corfu, Greece, pp. 1-5, 2007.

28. Ioana Zelina, **Petrică Pop**, Corina Pop Sitar and Ioana Taşcu, A Parallel Algorithm for Interpolation in Pancake Graph, Proceedings of 6th WSEAS International Conference, Corfu, Greece, pp. 98-101, 2007.

29. **P.C. Pop**, C. Sabo, C. Pop Sitar and M. Crăciun, A Simulated Annealing Based Approach for Solving the Generalized Minimum Spanning Tree Problem, *Creative Mathematics and Informatics*, Vol. 16, pp. 42-53, 2007.

30. **P.C. Pop**, W. Kern and G. Still, A New Relaxation Method for the Generalized Minimum Spanning Tree Problem, *European Journal of Operational Research*, 170, pp. 900-908, Elsevier, 2006.

31. **P.C. Pop**, A Lagrangian Relaxation Approach to the Generalized Minimum Spanning Tree Problem, *Mathematica*, Tome 48(71), No. 2, pp. 191-201, 2006.

32. **P.C. Pop**, A. Horvat Marc and C. Pop Sitar, An Approximation Algorithm for the At Least version of the Generalized Minimum Spanning Tree Problem, *Revue d'Analyse Numerique et de Theorie de l'Approximation*, Tome 35, No. 1, pp. 95-103, 2006.

33. **P.C. Pop**, A. Horvat Marc and C. Pop Sitar, The At Least version of the Generalized Minimum Spanning Tree Problem, *Carpathian Journal of Mathematics*, Vol. 22, No. 1-2, pp. 129-135, 2006.

34. Camelia Pintea, **Petrică Pop** and Camelia Chira, Reinforcing Ant Colony System for the Generalized Traveling Salesman Problem, Proceedings of International Conference Bio-Inspired Computing-Theory and Applications (BIC-TA), Wuhan, China, Vol. Evolutionary Computing Section, pag. 245-252, 2006.

35. **P.C. Pop**, W. Kern and G. Still, An Approximation Algorithm for the Generalized Minimum Spanning Tree Problem with bounded cluster size, Proceedings of First ACiD Conference, *Text in Algorithms* 4, King's College Publications, pp. 115-122, 2005.

36. **P.C. Pop**, Approximation Theory in Combinatorial Optimization. Application to the Generalized Minimum Spanning Tree Problem, *Revue d'Analyse Numerique et de Theorie de l'Approximation*, Tome 34, No. 1, pp. 93-102, 2005.

37. **P.C. Pop** and G. Still, An easy way to obtain strong duality results in linear semidefinite and linear semiinfinite programmning, *Mathematica*, Tome 47(70), No. 1, pp. 105-112, 2005.

38. **P.C. Pop**, On Some Polynomial Solvable Cases of the Generalized Minimum Spanning Tree Problem, în Proceedings of the International Conference on Theory and Applications of Mathematics and Informatics, Alba Iulia, 15-18 Septembrie, 2005, *Acta Universitatis Apulensis*, No. 10/2005, pg. 189-195, ISSN 1582-5329.

39. **P.C. Pop**, New Models of the Generalized Minimum Spanning Tree Problem, *Journal of Mathematical Modelling and Algorithms*, Vol. 3, Issue 2, pp. 153-166, Kluwer Academic Publications, 2004.

40. **P.C. Pop** and C. Pop Sitar, A note on the complexity of the Generalized Minimum Spanning Tree Problem, *Studia Universitatis Babeş-Bolyai, Series Informatics*, Volume XLIX, Number 2, pg. 75-80, 2004.

41. **P.C. Pop**, C. Pop Sitar and I. Zelina, Efficient Algorithms for the Generalized Minimum Spanning Tree Problem, în Proceedings of 4-th International Conference on Applied Mathematics, Baia Mare, Romania, 23-26 September, 2004, *Carpathian Journal of Mathematics*, Vol. 20, No. 1, pg. 109-117, 2004, ISBN 1584-2851.

42. **P.C. Pop** and I. Zelina, Heuristic Methods for the Generalized Minimum Spanning Tree Problem, în Proceedings of International Conference on Theory and Applications of Mathematics and Informatics, Thessaloniki, Greece, 16-18 September, 2004, *Acta Universitatis Apulensis*, No. 8/2004, pg. 385-396, ISSN 1582-5329.

43. **P.C. Pop**, A New Method for Solving the Generalized Minimum Spanning Tree Problem, în Proceedings of European Conference on Graph Theory, Combinatorics and Applications, pp. 313-317, Prague, Czech Republic, 8-12 September, 2003, ISBN 80-239-1185-6.

44. **P.C. Pop**, Approximation Results for the Generalized Minimum Spanning Tree Problem, *Bul. Ştiinţific Univ. Baia Mare*, Ser. B, Vol. 18, No. 1, pg. 95-104, 2002.

45. **P.C. Pop**, W. Kern and G. Still, Relaxation Methods for the Generalized Minimum Spanning Tree Problem, *Electronic Notes in Discrete Mathematics*, Vol. 8, pp. 76-79, Elsevier, 2001.

46. **P.C. Pop**, W. Kern and G. Still, An Approximation Algorithm for the Generalized Minimum Spanning Tree Problem with bounded cluster size, *Memorandum*, No. 1577, Twente University, the Netherlands, 2001.

47. **P.C. Pop**, The Generalized Minimum Spanning Tree Polytope and Related Polytopes, *Memorandum* No. 1587, Twente University, the Netherlands, 2001.

48. **P.C. Pop**, W. Kern and G. Still, The Generalized Minimum Spanning Tree Problem, *Memorandum*, No. 1542, Twente University, the Netherlands, 2000.

49. **P.C. Pop**, Polyhedral aspects and optimality of the generalized minimum spanning tree problem, *Bul. Ştiinţific Univ. Baia Mare*, Vol. 16. No. 1, pp. 111-124, 2000.

50. **P.C. Pop** and G. Still, An easy way to obtain strong duality results in linear, linear semidefinite and linear semiinfinite programmning, *Memorandum* No. 1493, Twente University, the Netherlands, 1999.

51. **P.C. Pop**, Optimal Maintenance of a Machine, *Bul. Ştiinţific Univ. Baia Mare*, vol. XIII, pp. 131-138, 1997.

**BOOKS**

1. **P.C. Pop**, The Generalized Minimum Spanning Tree Problem, PhD thesis, Twente University Press, Enschede, the Netherlands, 2002.

2. **P.C. Pop**, Operations Research (in Romanian), Editura Risoprint Cluj-Napoca, 2005.

3. **P.C. Pop**, Mathematical Programming. Theory and Applications (in Romanian), Editura Universităţii de Nord Baia Mare, 2009.

4. **P.C. Pop**, Mathematical models of the Generalized Combinatorial Optimization Problems, to appear 2010.

**MEMBER OF SCIENTIFIC SOCIETIES**

- Member of Romanian Mathematical Society (SSMR);
- Member of American Mathematical Society (SSMR);
- Member of Dutch Operations Research Society, LNMB;
- Member of Association Computability in Europe.

**Member in Conference Program Committees**

- The 6-th International Conference on Natural Computing (ICNC'10), Yantai, China, 10-12 August 2010;
- International Conference on Evolutionary Computation, (ICEC 2010), Valencia, Spain, 24-26 October 2010;
- 7-th International Workshop on Hybrid Metaheuristics, Vienna, Austria, October 1st - 2nd, 2010;
- Second Workshop on Heuristic Methods for Design, Deployment and Reliability of Networks and Network Applications (HEUNET 2010), in conjuction with SAINT 2010, Seoul, Korea, 19-23 July 2010;
- The 5-th International Conference on Hybrid Artificial Intelligent Systems, 23rd-25th June 2010, San Sebastian, Spain;
- International Conference on Computers, Coomunications and Control (ICCC 2010), Baile Felix, Oradea, Romania, 12-16 May, 2010;
- The 9-th Balkan Conference on Operational Research BALCOR 2009, 2-6 September, Constanta, Romania;
- WSC 2009 Online World Conference on Soft Computing in Industrial Applications 17 - 29 of November 2009;
- Heuristic Methods for Design, Deployment and Reliability of Networks and Network Applications, Turku, Finland, 28 July - 1 August 2008;
- AIC'08, ISTASC'08, ISCGAV'08, Rhodos Island, Greece, August 2008;
- WSC 2008 Online World Conference on Soft Computing in Industrial Applications 10th - 21st of November 2008 Online Conference on the Internet.

**Member in Conference Organizing Committees**

- 7-th INTERNATIONAL CONFERENCE ON APPLIED MATHEMATICS (ICAM6), 1-4 September, Baia Mare 2010
- 6-th INTERNATIONAL CONFERENCE ON APPLIED MATHEMATICS (ICAM6), 18-21 September, Baia Mare 2008
- 5-th INTERNATIONAL CONFERENCE ON APPLIED MATHEMATICS (ICAM5), 21-24 September, Baia Mare 2006

**EDITORIAL ACTIVITIES**

- Managing Editor Carpathian Journal of Mathematics (journal rated ISI);
- Member of the Editorial Board Creative Mathematics and Informatics;
- Member of the Editorial Board International Journal of Research and Reviews in Applied Sciences;
- Member of the Scientific Board Infocomp - Journal of Computer Science;
- Contributing Editor IAOR (International Abstracts in Operations Research).

**JOURNAL REVIEWER**

- Computing Reviews,
- Mathematical Reviews,
- Zentralblatt fur Mathematika,
- European Journal of Operational Research,
- Quarterly Operations Research,
- Networks,
- Journal of Heuristics,
- Information Sciences,
- International Journal of Metaheuristics,
- Carpathian Journal of Mathematics,
- Infocomp - Journal of Computer Science,
- International Journal of Hybrid Intelligent Systems,
- Mathematica,
- Creative Mathematics and Informatics,
- WSEAS Journals and Conferences.

**LANGUAGES SPOKEN**: Romanian (mother tongue), English (excellent), French (good), Dutch (good).