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Curriculum Vitae

Włodzimierz Ogryczak

- Education/Degrees** Warsaw University, Faculty of Mathematics & Informatics
Warsaw, Poland
1973 – **M.Sc. in Mathematics**
(Thesis: Linear Programming with Variable Coefficients)
1983 – **Ph.D. in Mathematical Sciences**
(Thesis: On Numerical Stability of the Simplex Method)
- Polish Academy of Sciences, Systems Research Institute
Warsaw, Poland
1997 – **D.Sc. (Habilitation) in Technical Sciences**
(Thesis: Linear and Discrete Optimization with Multiple Criteria
— Preference Models and Applications to Decision Support)
- Present Appointment** Warsaw University of Technology
Faculty of Electronics & Information Technology
Institute of Control & Computation Engineering
Warsaw, Poland
Professor and Head of Optimization & Decision Support Division
- Languages** English (fluent)
Polish (native)
Russian (basic)

Professional Experience

Past employment

<i>Institution</i>	<i>Place</i>	<i>Occupation</i>	<i>Period</i>
Warsaw University	Warsaw	Assistant	1973 – 1975
Faculty of Mathematics	Poland	Senior Assistant	1975 – 1983
& Informatics		Assistant Professor	1983 – 1995
Institute of Informatics		Senior Lecturer (tenure position)	1995 – 1999
Warsaw University of Technology	Warsaw	Professor	from 2000
Faculty of Electronics	Poland	Head of the Optimization and Decision Support Division	from 2003
& Information Technology			
Institute of Control			
& Computation Engineering			
Marshall University	Huntington	H.P.Kizer Eminent Chair	1989 – 1992
College of Business	WV, USA	in Computer Science	
Computer & Information Sciences			
Université Libre de Bruxelles	Brussels	Visiting Professor	1994 – 1995
Mathématiques de la Gestion	Belgium		

Research Interests

Theoretical research, computer solutions and interdisciplinary applications in the area of Operations Research, Optimization and Decision Making with the main stress on

- Multiple criteria analysis and decision support,
- Decision making under risk,
- Linear, network and discrete programming,
- Location and distribution problems,
- Computer implementations.

Membership in Professional Societies

- International Society for Multiple Criteria Decision Making,
- Institute for Operations Research and the Management Sciences (formerly ORSA Full Member),
- Polish Operational and Systems Research Society.

Editorial Activities

- Consulting Editor for *Journal of Geographic Information and Decision Analysis*
- Guest Editor (with G.Kersten): *Portfolio Optimization*, Special Issue of *Control and Cybernetics*, **28**, 1999, No. 4.
- Guest Editor (with R.Vetschera): *Methodological Foundations of Multi-Criteria Decision Making*, Feature Issue of *European Journal of Operational Research*, forthcoming.
- Serving as a Reviewer for Journals:
 - Annals of Operations Research,
 - Applicationes Mathematicae
 - Archives of Control Sciences,
 - Central European Journal for Operations Research and Economics,
 - Computers and Operations Research,
 - Control and Cybernetics,
 - Decisions in Economics and Finance,
 - European Journal of Operational Research (regularly),
 - IEEE Transactions on Systems, Man, and Cybernetics (Part B)
 - Information Processing Letters,
 - Information Systems and Operational Research – INFOR,
 - INFORMS Journal on Computing,
 - Journal of Multi-Criteria Decision Analysis,
 - Journal of Optimization Theory and Applications,
 - Mathematical Programming,
 - Naval Research Logistics,
 - OMEGA – International Journal of Management Science,
 - Operations Research,
 - Operations Research Letters,
 - Optimization,
 - SIAM Journal on Optimization,
 - Systems Science,
 - Transportation Science.

Professional Achievements

Publications

Books (monographs)

- [1] *Linear and Discrete Optimization with Multiple Criteria: Preference Models and Applications to Decision Support* (in Polish). Warsaw University Press, Warsaw, 1997.
- [2] *Linear and Integer Programming* (in Polish). Scientific-Technical Publishers (WNT), Warsaw, 1981. (with K. Zorychta).

Books (textbooks)

- [3] *Mathematical Programming with the MPSX Package* (in Polish). Warsaw University Press, Warsaw, 1989.
- [4] *Linear Programming Packages* (in Polish). Polish Academy of Sciences, Warsaw, 1989.

Chapters in Books

- [5] Equitable Approaches to Location Problems. In *Spatial Multicriteria Decision Making and Analysis: A Geographic Information Sciences Approach*, J.-C. Thill (ed.), pp. 103–126. Ashgate, Brookfield, 1999. (with M.M. Kostreva).
- [6] A Generalized Reference Point Approach to Multiobjective Transshipment Problem with Facility Location. In *Aspiration Based Decision Support Systems — Theory, Software and Applications*, A. Lewandowski and A. Wierzbicki (eds.), Lecture Notes in Economics and Mathematical Systems 331, pp. 213–229. Springer Verlag, New York, 1989. (with K. Studziński & K. Zorychta).
- [7] Solving Multiobjective Distribution-Location Problems with the DINAS System. In *Aspiration Based Decision Support Systems — Theory, Software and Applications*, A. Lewandowski and A. Wierzbicki (eds.), Lecture Notes in Economics and Mathematical Systems 331, pp. 230–250. Springer Verlag, New York, 1989. (with K. Studziński & K. Zorychta).

Edited Volumes

- [8] *Portfolio Optimization*, The Special Issue of *Control and Cybernetics*, **28**, No. 4, 1999. (with G.Kersten).
- [9] *Methodological Foundations of Multi-Criteria Decision Making*, Feature Issue of *European Journal of Operational Research*, **158**, No. 2, 2004. (with R.Vetschera).

Peer-reviewed Journal Publications

- [10] A Multi-Criteria Approach to Fair and Efficient Bandwidth Allocation, *OMEGA*. (with A.Wierzbicki and M.Milewski)

- [11] Multicriteria Models for Fair Resource Allocation, *Control and Cybernetics*, **36**, (2007).
- [12] Conditional Value at Risk and Related Linear Programming Models for Portfolio Optimization, *Annals of Operations Research*, **152**, (2007). (with R.Mansini and M.G.Speranza).
- [13] Fair and efficient network dimensioning with the reference point methodology, *Journal of Telecommunications and Information Technology*, **4/2006**, 21–30. (with A.Wierzbicki and M.Milewski).
- [14] On Extending the LP Computable Risk Measures to Account Downside Risk, *Computational Optimization and Applications*, **32**, (2005), 133–160. (with A.Krzemienowski).
- [15] Telecommunications Network Design and Max-Min Optimization Problem, *Journal of Telecommunications and Information Technology*, **3/2005**, 43–56. (with M. Pioro and A. Tomaszewski).
- [16] On Multi-Criteria Approaches to Bandwidth Allocation, *Control and Cybernetics*, **33**, (2004), 427–448. (with A.Wierzbicki).
- [17] Equitable Aggregations and Multiple Criteria Analysis, *European Journal of Operational Research*, **158**, pp. 362–367, 2004. (with M.M.Kostreva and A.Wierzbicki).
- [18] LP Solvable Models for Portfolio Optimization: A Classification and Computational Comparison, *IMA Journal of Management Mathematics*, **14**, pp. 187–220, 2003. (with R.Mansini and M.G.Speranza).
- [19] On Multiple Criteria Decision Support for Suppliers on the Competitive Electric Power Market. *Annals of Operations Research*, **121**, pp. 79–104, 2003. (with M.Kaleta, E.Toczyłowski and I.Żóltowska).
- [20] Fair resource allocation schemes and network dimensioning problems, *Journal of Telecommunications and Information Technology*, **3/2003**, 34–42. (with T. Śliwiński and A.Wierzbicki).
- [21] On LP Solvable Models for Portfolio Selection. *Informatica*, **14**, pp. 37–62, 2003. (with R.Mansini and M.G.Speranza).
- [22] On Solving Linear Programs with the Ordered Weighted Averaging Objective. *European Journal of Operational Research*, **148**, pp. 80–91, 2003. (with T. Śliwiński).
- [23] Minimizing the Sum of the k Largest Functions in Linear Time. *Information Processing Letters*, **85**, pp. 117–122, 2003. (with A. Tamir).
- [24] Multiple Criteria Optimization and Decisions under Risk. *Control and Cybernetics*, **31**, pp. 975–1003, 2002.
- [25] Dual Stochastic Dominance and Quantile Risk Measures. *International Transactions in Operational Research*, **9**, pp. 661–680, 2002. (with A. Ruszczyński).
- [26] Conditional Median: A Parametric Solution Concept for Location Problems. *Annals of Operations Research*, **110**, pp. 167–181, 2002. (with M. Zawadzki).

- [27] Location Problems with the Minimization of the Conditional Mean Distance (in Polish). *Zeszyty Naukowe Politechniki Śląskiej: Automatyka*, **136**, pp. 167–177, 2002. (with M. Zawadzki).
- [28] On Equitable Approaches to Resource Allocation Problems: The Conditional Minimax Solution. *Journal of Telecommunications and Information Technology*, 3/2002, pp. 40–48. (with T. Śliwiński).
- [29] Dual Stochastic Dominance and Related Mean–Risk Models. *SIAM Journal on Optimization*, **13**, pp. 60–78, 2002. (with A. Ruszczyński).
- [30] On Goal Programming Formulations of the Reference Point Method. *Journal of the Operational Research Society*, **52**, pp. 691–698, 2001.
- [31] Extending the MAD Portfolio Optimization Model to Incorporate Downside Risk Aversion. *Naval Research Logistics*, **48**, pp. 185–200, 2001. (with W. Michalowski).
- [32] Comments on Properties of the Minimax Solutions in Goal Programming. *European Journal of Operational Research*, **132**, pp. 17–21, 2001.
- [33] On Consistency of Stochastic Dominance and Mean–Semideviation Models. *Mathematical Programming*, **89**, pp. 217–232, 2001. (with A. Ruszczyński).
- [34] Multiple Criteria Linear Programming Model for Portfolio Selection. *Annals of Operations Research*, **97**, pp. 143–162, 2000.
- [35] Inequality Measures and Equitable Approaches to Location Problems. *European Journal of Operational Research*, **122**, pp. 374–391, 2000.
- [36] On the Multicriteria Approach to Location Problems (in Polish). *Zeszyty Naukowe Politechniki Śląskiej: Automatyka*, **131**, pp. 111–120, 2000.
- [37] On the Distribution Approach to Location Problems. *Computers & Industrial Engineering*, **37**, pp. 595–612, 1999.
- [38] A Recursive Procedure for Selecting Optimal Portfolio According to the MAD Model. *Control and Cybernetics*, **28**, pp. 725–738, 1999. (with W. Michalowski).
- [39] Linear Optimization with Multiple Equitable Criteria. *RAIRO Operations Research*, **33**, pp. 275–297, 1999. (with M.M. Kostreva).
- [40] From Stochastic Dominance to Mean–Risk Models: Semideviations as Risk Measures. *European Journal of Operational Research*, **116**, pp. 33–50, 1999. (with A. Ruszczyński).
- [41] Relocation Problems Arising in Conservation Biology. *Computers & Mathematics with Applications*, **37**, pp. 135–150, 1999. (with M.M. Kostreva & D.W. Tonkyn).
- [42] Location Problems from the Multiple Criteria Perspective: Efficient Solutions. *Archives of Control Sciences*, **7 (XLIH)**, pp. 161–180, 1998.

- [43] A Spreadsheet Implementation of Aspiration/Reservation Based Decision Support. *Central European Journal for Operations Research and Economics*, **5**, pp. 111–129, 1997. (with J. Korycki).
- [44] On Cent–Dians of General Networks. *Location Science*, **5**, pp. 15–28, 1997.
- [45] On the Lexicographic Minimax Approach to Location Problems. *European Journal of Operational Research*, **100**, pp. 566–585, 1997.
- [46] A Note on Modeling Multiple Choice Requirements for Simple Mixed Integer Programming Solvers. *Computers & Operations Research*, **23**, pp. 199–205, 1996.
- [47] Multiple Criteria Location Problem: 2. Preference–based Techniques and Intertactive Decision Support. *Environment & Planning*, **A28**, pp. 69–98, 1996. (with J. Malczewski).
- [48] Multiple Criteria Location Problem: 1. A Generalized Network Model and the Set of Efficient Solutions. *Environment & Planning*, **A27**, pp. 1931–1960, 1995. (with J. Malczewski).
- [49] Dual Simplex Algorithm with Implicit Representation of Variable Upper Bounds. *Optimization*, **33**, pp. 321–338, 1995.
- [50] On Solving Multiobjective Linear Programs with Implicit Representation of Minimax Scalarizing Function. *Archives of Control Sciences*, **3 (XXXIX)**, pp. 193–209, 1994. (with K. Zorychta).
- [51] A Goal Programming Model for the Reference Point Method. *Annals of Operations Research*, **51**, pp. 33–44, 1994.
- [52] Aspiration/Reservation Decision Support — A Step Beyond Goal Programming. *Journal of Multi-Criteria Decision Analysis*, **1**, pp. 101–117, 1992. (with S. Lahoda).
- [53] DINAS — A Computer–Assisted Analysis System for Multiobjective Transshipment Problems with Facility Location. *Computers & Operations Research*, **19**, pp. 637–647, 1992. (with K. Studziński & K. Zorychta).
- [54] An Implementation of Variable Upper Bounds via SUB Methodology. *Journal of Information & Optimization Sciences*, **13**, pp. 29–47, 1992.
- [55] An Interactive Approach to the Central Facility Location Problem: Locating Pediatric Hospitals in Warsaw. *Geographical Analysis*, **22**, pp. 244–258, 1990. (with J. Malczewski).
- [56] A Solver for the Multi–Objective Transshipment Problem with Facility Location. *European Journal of Operational Research*, **43**, pp. 53–64, 1989. (with K. Studziński & K. Zorychta).
- [57] Simplex Method is not Always Well–behaved. *Linear Algebra and Its Applications*, **109**, pp. 41–57, 1988.
- [58] The Analysis of Liquid Milk Supply to Urban Agglomeration by a Bicriterion Linear Transportation Model with the MPSX/370 Package. *Archives of Control Sciences*, **XXXIII**, pp. 368–376, 1988. (with W. Szymanowski).

- [59] Symmetric Duality Theory for Linear Goal Programming. *Optimization*, **19**, pp. 373–396, 1988.
- [60] A Multiobjective Approach to Reorganization of Health Service Areas: A Case Study. *Environment & Planning*, **A20**, pp. 1461–1470, 1988. (with J. Malczewski).
- [61] A Counterexample to Transformations in Multiphase and Sequential Linear Goal Programming. *Control and Cybernetics*, **17**, pp. 79–84, 1988.
- [62] Vehicle Routes Optimization with IBM-PC Microcomputers (in Polish). *Przegląd Statystyczny*, **35**, pp. 81–98, 1988. (with B. Ogryczak).
- [63] On Practical Stopping Rules for the Simplex Method. *Mathematical Programming Study*, **31**, pp. 167–174, 1987.
- [64] Health Care Districts Planning by Multiobjective Analysis with the MPSX/370 Package. *Archives of Control Sciences*, **XXXII**, pp. 369–381, 1987. (with J. Malczewski).
- [65] General Concept of the Dynamic Interactive Network Analysis System (DINAS). *Archives of Control Sciences*, **XXXII**, pp. 279–289, 1987. (with K. Studziński & K. Zorychta).
- [66] A Symmetric Duality Concept for Linear Goal Programming: Principal Results. *Control and Cybernetics*, **15**, pp. 413–423, 1986.
- [67] On Optimization of the Foodstuff Distribution in Urban Agglomerations (in Polish). *Handel Wewnętrzny*, **6**, pp. 38–46, 1984. (with A. Całczyński & W. Szymanowski).

Peer-reviewed Publications in Proceedings Published as Commercial Books

- [68] On Direct Methods for Lexicographic Min-Max Optimization, in: *Computational Science and Its Applications-ICCSA 2006, Lecture Notes In Computer Science 3982*, Springer, 2006, 802–811. (with T.Sliwinski).
- [69] SSD Consistent criteria and coherent risk measures, in: *System Modeling and Optimization, Proceedings of the 22nd IFIP TC7 Conference*. Springer 2006, 226–237. (with M.Opolska-Rutkowska).
- [70] Risk Measurement: Mean Absolute Deviation versus Gini's Mean Difference. In *Decision Theory and Optimization in Theory and Practice*, G. Wanka (ed.), pp. 33–51, Shaker Verlag, Aachen, 2000.
- [71] Stochastic Dominance Relation and Linear Risk Measures. In *Financial Modelling — Proceedings of the 23rd Meeting of the EURO Working Group on Financial Modelling*, A.M.J. Skulimowski (ed.), pp. 191–212. Progress & Business Publishers, Kraków, 1999.
- [72] Reference Distribution — An Interactive Approach to Multiple Homogeneous and Anonymous Criteria. In *Multiple Criteria Decision Making — Proceedings of the XIIth International Conference*, G. Fandel and T. Gal (eds.), Lecture Notes in Economics and Mathematical Systems 448, pp. 156–165. Springer Verlag, Berlin, 1997.

- [73] Preemptive Reference Point Method. In *Multicriteria Analysis — Proceedings of the XIth International Conference on MCDM*, J. Climaco (ed.), pp. 156–167. Springer Verlag, Berlin, 1997.
- [74] DINAS Dynamic Interactive Network Analysis System: A Tutorial Example. In *User-Oriented Methodology and Techniques of Decision Analysis and Support — Proceedings of the IIASA International Workshop*, J. Wessels and A.P. Wierzbicki (eds.), Lecture Notes in Economics and Mathematical Systems 397, pp. 209–222. Springer Verlag, New York, 1993. (with K. Studziński & K. Zorychta).
- [75] EDINET — A Network Editor for Transshipment Problems with Facility Location. In *Computer Science & Operations Research: New Developments in Their Interfaces*, O.Balci, R. Sharda and S.A.Zenios (eds.), pp. 197–212. Pergamon Press, Oxford, 1992. (with K. Studziński & K. Zorychta).
- [76] On Solving Multiobjective Linear Programs via Minimax Scalarizing Function. In *Multiple Criteria Decision Making — Proceedings of the IXth International Conference: Theory and Applications in Business, Industry and Government*, A. Goicoechea, L. Duckstein and S. Zionts (eds.), pp. 311–325. Springer Verlag, Berlin, 1992. (with K. Zorychta & J.M. Chaudri).
- [77] DINAS — Computer-Assisted System for Multi-Criteria Transportation and Location Analyses. In *Advances in Computing and Information — Proceedings of the International Conference on Computing and Information ICCI'90*, S.G. Akl, F. Fiala and W.W. Koczkodaj (eds.), Lecture Notes in Computer Science 468, pp. 216–224. Springer Verlag, New York, 1991.(with K. Studziński & K. Zorychta).
- [78] The Analysis of Liquid Milk Supply to Urban Agglomeration by Bicriterion Linear Transportation Model with the MPSX/370 Package. In *Improving Decision Making in Organizations — Proceedings of the VIIIth International Conference on Multiple Criteria Decision Making*, A.G. Lockett and G. Islei (eds.), Lecture Notes in Economics and Mathematical Systems 335, pp. 203–211. Springer Verlag, New York, 1989. (with W. Szymanowski).
- [79] On Health Care Districts Planning by Multiobjective Analysis with the MPSX/370 Package. In *Improving Decision Making in Organizations — Proceedings of the VIIIth International Conference on Multiple Criteria Decision Making*, A.G. Lockett and G. Islei (eds.), Lecture Notes in Economics and Mathematical Systems 335, pp. 314–324. Springer Verlag, New York, 1989. (with J. Malczewski).
- [80] Dynamic Interactive Network Analysis System. In *Improving Decision Making in Organizations — Proceedings of the VIIIth International Conference on Multiple Criteria Decision Making*, A.G. Lockett and G. Islei (eds.), Lecture Notes in Economics and Mathematical Systems 335, pp. 444–453. Springer Verlag, New York, 1989. (with K. Studziński & K. Zorychta).
- [81] Methodological Background of the Dynamic Interactive Network Analysis System (DINAS). In *Methodology and Software for Interactive Decision Support — Proceedings of the International IIASA Workshop*, A. Lewandowski and I. Stanchev (eds.), Lecture Notes in Economics and Mathematical Systems 337, pp. 195–201. Springer Verlag, New York, 1989. (with K. Studziński & K. Zorychta).

Peer-reviewed Publications in Proceedings

- [82] Bicriteria Models for Fair Resource Allocation, in: *Proceedings of the 1st International Workshop on Computational Social Choice (COMSOC-2006)*, U.Endriss, J.Lang (eds.), University of Amsterdam, 2006, 380–393.
- [83] On Fair and Efficient Bandwidth Allocation by the Multiple Target Approach, in: *2006 Next Generation Internet Design and Engineering*, IEEE, 2006, 48–55. (with M.Milewski and A.Wierzbicki).
- [84] Equity, Fairness and Multicriteria Optimization, in: *Multiple Criteria Decision Making '05*, T.Trzaskalik (ed.), The Karol Adamiecki University of Economics in Katowice, 2006, 185–199.
- [85] Applications of Max-Min Fairness Principle in Telecommunication Network Design, in: *2005 Next Generation Internet Networks*, IEEE, 2005, 219–225. (with M.Pioro, M.Dzida, A.Tomaszewski, M.Zagozdzon, E.Kubilinskas, P.Nilsson).
- [86] On generalized OWA approach to support location and routing decisions, in: *Advanced OR and AI Methods in Transportation, Proceedings of 10th EWGT Meeting and 16th Mini-EURO Conference*, A.Jaszkiewicz, M.Kaczmarek, J.Zak, M.Kubiak (Eds.), Poznan, Poland, 2005, 746–751. (with K.Fleszar).
- [87] Multi-Criteria Approach to Portfolio Optimization (in Polish). In *Preference Modeling and Risk '01*, T.Trzaskalik (ed.), Katowice, Poland, 2001, pp. 327–3338. (with A. Romaszkiewicz).
- [88] Portfolio Optimization by the MAD Model: Analysis on Performances on the Warsaw Stock Exchange (in Polish). In *Preference Modeling and Risk '99, Vol. 1*, T.Trzaskalik (ed.), Katowice, Poland, 1999, pp. 291–305. (with A. Romaszkiewicz).
- [89] Approaches to Network Congestion Management at Electricity Markets (in Polish). In *Competitive Electricity Market*, Lublin, Poland, 1999. pp. 135–142. (with K.Zadora-Przyłeki, T.Sikorski & E.Toczyłowski).
- [90] Equity and Risk Factors in Aspiration-Based Approaches. In *Proceedings of the International Workshop on Social Security Reform*, R.Kulikowski, G.J.MacDonald (eds.), Warsaw, Poland, 1998. pp. 61–62.
- [91] Multiple Criteria Linear Programming Model for Portfolio Selection. In *International Conference on Transition to Advanced Market Institutions and Economies: Systems and Operations Research Challenges*, R.Kulikowski, Z.Nahorski, J.W.Owsiński (eds.). Warsaw, Poland, 1997. pp. 302–305.
- [92] A Goal Programming Model of the Reference Point Method. In *Preprints of the IFAC/-IFORS/IIASA/TIMS Workshop on Support Systems for Decision and Negotiation Processes*. Warsaw, Poland, 1992. pp. 433–440.
- [93] A Unified Implementation of Various Multiple Objective LP Techniques. In *Proceedings of the 27th Annual Meeting Southeastern Chapter of The Institute of Management Sciences*. Myrtle Beach, South Carolina, USA, 1991. pp. 342–344. (with S. Lahoda).

- [94] Aspiration/Reservation Decision Support – A Step Beyond Goal Programming. In *Proceedings of the Third Annual Meeting the International Academy of Management and Marketing*. Detroit, Michigan, USA, 1991. pp. 655–663.
- [95] Interactive Multiple Criteria Linear and Discrete Optimization as a Kernel of Decision Support Systems. In *Proceedings of the 1991 Annual Meeting SE Decision Sciences Institute*. Arlington, Virginia, USA, 1991. pp. 101–103.
- [96] DINAS – Computer-Assisted System for Multi-Criteria Transportation and Location Analyses. In *Proceedings of the International Conference on Computing and Information ICCI'90*. Niagara Falls, Canada, 1990. pp. 221–224. (with K. Studziński & K. Zorychta).
- [97] An Interactive Decision Support System for Multicriteria Transportation–Location Problems (in Polish). In *Proceedings of the Conference on Computer Systems and Methods for Decision Support*. Warsaw, Poland, 1988. pp. 244–253. (with K. Studziński & K. Zorychta).
- [98] On Vehicle Routes Planning with IBM-PC Microcomputers (in Polish). In *Proceedings of the Conference on Computer Systems and Methods for Decision Support*. Warsaw, Poland, 1988. pp. 346–355. (with B. Ogryczak).
- [99] An Interactive Approach to Multiobjective Transshipment Problems with Facility Location. In *Internationale Tagung: Mathematische Optimierung — Theorie und Anwendungen*, Eisenach, Germany, 1987. pp. 106–109.
- [100] Models for the Foodstuff Distribution Organization Channels for Large Urban Agglomerations. In *Preprints of 5th IFAC/IFIP/IFORS International Conference on Control in Transportation Systems*. Vienna, Austria, 1986. pp. 73–82. (with W. Szymanowski).

Awards

- Award of the Polish Ministry of Higher Education and Technology for the book “Linear and Integer Programming”, 1982.
- Award of the President of Warsaw University of Technology, for research achievements, 2002.
- Marshall University Summer Research Award, 1990.
- Award of the Warsaw University President for research achievements, 1992.
- Award of the Warsaw University President for teaching achievements, 1988.
- Award of the Warsaw University President for teaching achievements, 1986.
- Award of the Warsaw University President for research achievements, 1983.
- Award of the Warsaw University President for research achievements, 1980.

Invited Lectures / Given Seminars

- University of Bergamo, Department of Applied Mathematics, Bergamo, Italy, 2005.
- University of Brescia, Department of Quantitative Methods, Brescia, Italy, 2005, 2002, 2000.
- International Institute for Applied Systems Analysis, Laxenburg, Austria, 1997, 1986.
- Clemson University, Department of Mathematical Sciences, Clemson, South Carolina, USA, 1996, 1991.
- University of Kaiserslautern, Faculty of Mathematics, Kaiserslautern, Germany, 1994.
- Eindhoven University of Technology, Department of Mathematics and Computer Science, Eindhoven, The Netherlands, 1993.
- Tilburg University, Center for Economic Research, Tilburg, The Netherlands, 1993.
- University of Delaware, Operations Research Program, Newark, Delaware, USA, 1989.
- Vienna University of Technology, Operations Research Department, Vienna, Austria, 1988.
- Technical University of Dresden, Faculty of Mathematics, Dresden, Germany, 1987, 1982, 1980.
- University of Macedonia, Faculty of Math. & Computer Science, Skopje, Yugoslavia, 1987.