J.B.G.Frenk

Curriculum Vitae

February 10, 2024

- Date and place of birth: October 20, 1955, Arnhem, The Netherlands
  Email:frenk@gtu.edu.tr

- Education:

  1. Gymnasium B final examination, 1974.

  2. Candidate's (Bachelor) Degree in Mathematics, University of Utrecht, Utrecht, The Netherlands, september 1977.

  3. Propadeuse Degree in Econometrics, EUR, Rotterdam, The Netherlands, july 1978.

  4. Candidate's (Bachelor) degree in Econometrics, EUR, Rotterdam, The Netherlands, august 1979.

  5. Master's Degree in Mathematics (specialization stochastic processes), University of Utrecht, Utrecht, March 1979, Title master thesis: Brownian motion and optimal stopping, master thesis supervisor Prof. Dr J.W.Cohen.)

  6. Ph.D. in Economics, EUR, Rotterdam, September 1983, Title Ph.D thesis: On renewal theory, Banach algebras and functions of bounded increase (promotor: Prof.Dr. L.F.M. de Haan, co promotors Prof. Dr D.van Dulst, Prof. Dr. W. Vervaat)

- Jobs.

  1. Visiting Assistant Professor, Department of Industrial Engineering and Operations Research, University of California, Berkeley, $1983 - 1984$.

  2. Assistant Professor in Applied Probability, Department of Mathematics and Computing Science, Eindhoven University of Technology, $1985 - 1986$.

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3. Assistant Professor in Applied Probability and Operations Research, Econometric Institute, Erasmus University, Rotterdam, $1987-1990$.

4. Research Associate Professor (wetenschappelijk hoofdmedewerker) in Applied Probability and Operations Research, Econometric Institute, Erasmus University, 1990-2002.

5. Associate Professor (universitair hoofddocent) in Logistics, Econometric Institute, Econometric Institute, Erasmus University, 2002-2009

6. Associate Professor, Faculty of Engineering and Natural Sciences, Sabanci University, Orhanli-Tuzla, 34956 Istanbul, Turkey. 2009-2015

7. Full professor, Faculty of Engineering and Natural Sciences, Sabanci University, Orhanli-Tuzla, 34956 Istanbul, Turkey,2015-2024.

8. Full professor, Faculty of Engineering, Department of Industrial engineering, Gebze Technical University, Gebze, Turkey, 2024-present

- Research interests.

Linear, Nonlinear and Integer Programming, Stochastic Processes, Convex Analysis, Noncooperative Game Theory, Applications of Operations Research techniques to Maintenance, Inventory Control, Spare Parts Management and Revenue Management,Statistics.

1   Publications in Journals.

Topic: Stochastic Processes: Renewal Theory and Regenerative Processes.

1. The behaviour of the renewal sequence in case the tail of the waiting time distribution is regularly varying with index -1, Advances of Applied Probability $14, 870-884, 1982$.

2. On renewal theory, Banach algebras and Functions of Bounded Increase, Ph.D. Thesis, 1983.

3. Some monotonicity properties of the delayed renewal function (with B. Hansen), Journal of Applied Probability $28, 811-821, 1991$.

4. Renewal theory for random variables with a heavy tailed distribution and finite variance (with J.Geluk), Statistics and Probability Letters 81, $77-82, 2011$.

Topic: Statistics

1. On the method of moments approach applied to a (generalized) Gamma population (with Hadi Abbaszadehpeivasti), Communications in Statistics and Probabality: Theory and Methods 52 (11), 3685-3708, 2023, https:// doi.org/10.1080/03610926.2021.1979042

Topic: Multivariate probability theory.

1. On computing the multivariate Poisson probability distribution (with S Javadi and B Cekyay) Methodology and Computing in Applied Probability. published online 20 June 2023 https://doi.org/10.1007/s11009-023-10036-z.

Topic: Convex Analysis, Duality Theory and Nonlinear Programming.

1. A deep cut ellipsoid algorithm for convex programming; theory and applications, (with J.Gromicho and S.Zhang), Mathematical Programming $63, 83 - 108, 1994$.

2. Generalized fractional programming and cutting plane algorithms (with A.I.Barros), Journal of Optimization and Applications $87(1), 103 - 120$, 1995.

3. A new algorithm for generalized fractional programs (with A.I.Barros, S.Schaible and S.Zhang), Mathematical Programming 72, $147 - 175$, 1996.

4. Using duality to solve generalized fractional programming problems (with A.I.Barros,S.Schaible and S.Zhang), Journal of Global Optimization 8, $139 - 170, 1996$.

5. An interior point based subgradient method for nondifferentiable convex programming (with J.F.Sturm and S. Zhang), Optimization methods and Software 10, $197 - 215, 1998$.

6. A duality theory for a class of generalized fractional programs (with J.R.Jefferson and S.C.Scott), Journal of Global Optimization 12, $239 - 245, 1998$.

7. Dominating sets for convex functions with some applications (with E. Carrizosa), Journal of Optimization Theory and Applications $96(2), 281 - 295, 1998$.

8. On classes of generalized convex functions, Gordan-Farkas type theorems and Lagrangian duality (with G.Kassay), Journal of Optimization Theory and Applications $102(2)$, $315 - 343$, 1999.

9. Minimax results and finite dimensional separation (with G.Kassay), Journal of Optimization Theory and Applications $113(2)$, $409 - 421$, 2002.

10. On equivalent results in minimax theory (with G.Kassay, J.Kolumbán), European Journal of Operational $157(1)$, $46 - 58$, 2004.

11. Recursive approximation of the high dimensional max function (with Ş.Ĭ. Birbil, S.Fang and S.Zhang), Operations Research Letters 33, $450 - 458$, 2005.

12. On Borel probability Measures and noncooperative game theory (with G. Kassay and V.Protassov), Optimization $54(1)$, $81 - 101$, 2005.

13. The level set method of Joo and its use in minimax theory (with G.Kassay), Mathematical Programming $105(1)$, $145 - 155$, 2006.

14. Equilibrium constrained optimization problems (with G.Bouza, G.J.Still and Ş.Ĭ.Birbil), European Journal of Operational Research 169, $1108 - 1127$, 2006.

15. A note on the paper Fractional programming with convex quadratic forms and functions by H.P.Benson, European Journal of Operational Research 176, $641 - 642$, 2007.

16. An elementary proof of the Fritz-John and Karush-Kuhn-Tucker conditions in nonlinear programming (with Ş.Ĭ.Birbil and G.J.Still), European Journal of Operational Research 180, $479 - 484$, 2007.

17. On linear programming duality and necessary and sufficient conditions in minimax theory (with P.Kas and G.Kassay), Journal of Optimization Theory and Applications 132, $423 - 439$, 2007.

18. Lagrangean duality and cone convexlike functions (with G.Kassay), Journal of Optimization Theory and Applications 134, $207 - 222$, 2007.

19. Quasiconvex functions: How to separate if you must! (with J.A Gromicho and S.Zhang), Stud.Univ.Babes Bolyai Math. 67 (1), $105 - 128$, 2022.

Applications to Operations Research and Economics.

Topic: Combinatorial Optimization and Probability Theory.

1. Randomly degenerated polytopes for testing mathematical programming algorithms (with J.W. van Dam and J.Telgen), Mathematical Programming $26, 172 - 181, 1983$.

2. The asymptotic behavior of a distributive sorting model (with J.W. van Dam and A.H.G. Rinnooy Kan), Computing $31, 287 - 303, 1983$.

3. Asymptotic properties of the quadratic assignment problem (with M. van Houweninge and A.H.G.Rinnooy Kan), Mathematics of Operations Research $10, 100 - 116, 1985$.

4. Order statistics and the linear assignment problem (with M. van Houweninge and A.H.G.Rinnooy Kan), Computing $39, 165 - 174, 1987$.

5. A probabilistic analysis of the next fit decreasing bin packing heuristic (with J.Csirik, A.Frieze, G.Galambos and A.H.G.Rinnooy Kan), Operations Research Letters $5, 233 - 236, 1986$.

6. Probabilistic analysis of algorithms for dual bin packing problems (with J.Csirik, G.Galambos and A.H.G.Rinnooy Kan), Journal of Algorithms $12, 189 - 203, 1991$.

Topic: Insurance Mathematics.

1. Optimal claim behaviour for third party liability insurances or to claim or not to claim: that is the question (with N.P.Dellaert, A.van Kouwenhoven and B.S.van der Laan), Insurance: Mathematics and Economics $9, 59 - 76, 1990$.

2. Insurers profits in the third party liability insurance (with N.P. Dellaert and B.S.van der Laan), Insurance: Mathematics and Economics $10, 165 - 172, 1991$.

3. Optimal claim behaviour for third-party liability insurances with perfect information (with N.P.Dellaert and E.Voshol), Insurance: Mathematics and Economics $10, 145 - 151, 1991$.

4. Optimal claim behaviour for insurances for vehicle damage insurances (with N.P.Dellaert and L.P.Rijsoort), Insurance: Mathematics and Economics $12, 225 - 244, 1993$.

Topic: Inventory Control.

1. An efficient optimal solution method for the joint replenishment problem (with R.Dekker and R.E.Wildeman), European Journal of Operational Research $99, 433 - 444, 1997$.

2. On Regenerative Processes and Inventory Control (with M.J.Kleijn), Pure and Applied Mathematics $9(1 - 2), 61 - 94, 1998$.

3. An efficient algorithm for a generalized joint replenishment problem (with R.Dekker and M.J.Kleijn), European Journal of Operational Research $118, 413 - 428, 1999$.

4. On the newsboy model with a cutoff transaction size (with R.Dekker, T. de Kok and M.Kleijn), IIE Transactions $32, 461 - 469, 2000$.

5. Modeling of inventory control with regenerative processes (with E.M. Bazsa and P.W. den Iseger), International Journal of Production Economics $71, 263 - 276, 2001$.

6. The joint replenishment problem with variable production costs (with Z.P. Bayindir and Ş.Ĭ. Birbil), European Journal of Operational Research $175, 622 - 640, 2006$.

7. A deterministic inventory/production model with a general inventory cost rate function and piecewise linear concave production costs (with Z.P. Bayindir and Ş.Ĭ. Birbil), European Journal of Operational Research, $179, 114 - 123, 2007$.

8. End-of-life inventory decisions for consumer electronics service parts (with M. Pourakbar and R. Dekker), Production and Operations Management (POMS), Vol 21-No 5, $889 - 206$, September-October 2012.

9. On EOQ cost models with arbitrary purchase and transportation costs (with Ilker Birbil , K , Bulbul and H.M. Mulder), Journal of Industrial and Management Optimization (JİMO) Vol 11, No-4, October 2015.

10. The Role of Contract Expirations in Service Parts Management (with C.Pince and R.Dekker), Production and Operations Management, volume 24 (Issue 10): 1580-1597, 2015.

11. An exact static solution approach for the service life parts end-of-life inventory problem (with Morteza Pourakbar, Sonya Javadi Khatab, Semih O., Sezer), European Journal of Operational Research $272, 496 - 504, 2019$.

12. An optimal stopping approach for the end-of-life inventory problem (with Sonya Javadi Khatab and Semih O., Sezer), Mathematical Methods of Operations Research $90, 329 - 363, 2019$.

Topic: Location Theory.

1. A note on a stochastic location problem (with M.Labbe and S.Zhang), Operations Research Letters $13, 213 - 214, 1993$.

2. The Weiszfeld method in single facility location (with M.T.Melo and S.Zhang), Investigacao Operacional $14, 35 - 59, 1994$.

3. A Weiszfeld method for a generalized L_p-distance minisum location model in continuous space (with M.T.Melo and S.Zhang), Location Science $2, 111 - 127, 1994$.

4. On Miehle's algorithm and the perturbed L_p-distance multifacility location problem (with M.J.Kleijn), Studies in Locational Analysis $7, 61 - 75, 1994$.

5. General models in min-max continuous location:theory and solution techniques (with J.Gromicho and S.Zhang), Journal of Optimization Theory and Applications $89\ (1), 39 - 63, 1996$.

6. General models in min-max planar location: checking optimality conditions (with J.Gromicho and S.Zhang), Journal of Optimization Theory and Applications $89\ (1), 65 - 87, 1996$.

7. Fractional location problems (with A.I.Barros and J.Gromicho), Location Science $5\ (1), 47 - 58, 1997$.

Topic: Machine Scheduling and Probability Theory.

1. A hierarchical scheduling problem with a well-solvable second stage (with A.H.G.Rinnooy Kan and L.Stougie), Annals of Operations Research $1, 43 - 58, 1984$.

2. The rate of convergence to optimality of the LPT rule (with A.H.G.Rinnooy Kan), Discrete Applied Mathematics $14, 187 - 197, 1986$.

3. The asymptotic optimality of the LPT rule (with A.H.G.Rinnooy Kan), Mathematics of Operations Research $12, 241 - 254, 1987$.

4. Single machine scheduling subject to stochastic breakdowns (with J.Birge, J.Mittenthal and A.H.G.Rinnooy Kan), Naval Research Logistics 37, 661−677, 1990.

5. A note on one-machine scheduling problems with imperfect information, Probability in the Engineering and Informational Sciences 5, 317−331, 1991.

6. A general framework for stochastic one-machine scheduling problems with zero release times and no partial ordering, Probability in the Engineering and Informational Sciences 5, 297−315, 1991.

Topic: Maintenance.

1. Optimizing a general optimal replacement model by fractional programming techniques (with A.I.Barros, R.Dekker and S. van Weeren), Journal of Global Optimization 10, 405−423, 1997.

2. A unified treatment of single component replacement models (with R. Dekker and M.J.Kleijn), Mathematical Methods of Operations Research 45, 437−454, 1997.

3. On the marginal cost approach in maintenance (with R. Dekker and M.J.Kleijn), Journal of Optimization Theory and Applications 94 (3), 771−781, 1997.

4. Modelling and optimizing imperfect maintenance of coatings on steel structures (with R. Nicolai and R. Dekker), Structural Safety 31, 234-244, 2009.

Topic: Economics

1. Labour costs and queueing theory in retailing (with A.R.Thurik and C.A. Bout), European Journal of Operational Research 55, 260−267, 1991.

Topic: Revenue Management.

1. The role of robust optimization in single leg airline revenue management (with Ş.Ĭ., Birbil, J., Gromicho and S., Zhang), Management Science 55(1), 148−163, 2009.

2. Tractable open loop policies with joint overbooking and capacity control over a single flight leg with multiple fare classes (with Ş.Ĭ., Birbil, N., Noyan and H., Topaloglu), Transportation Science $46(4)$, $460 - 481$, November 2012.

3. Increasing the revenue of self storage warehouses by facility design (with Y.Yong (Marseille), A. Gabor (EUR Rotterdam) and R. De Koster (EUR Rotterdam), Production and Operations Management (POM) $22(3)$, $555-570$, (May-June) 2013.

4. Single-leg revenue management with overbooking (with N. Aydin, Ş.Ĭ. Birbil, N. Noyan), Transportation Science $47(4)$, $560 - 583$, November 2013.

5. A Network airline based revenue management framework based on decomposition by origins and destinations (with Ş.Ĭ. Birbil, G., Gromicho and S., Zhang), Transportation Science $48(3)$, $313 - 333$,August 2014, ISSN $0041 - 1655$ (print).

6. On the single-leg airline revenue management problem in continuous time (with S.O., Sezer, A.M., Arslan) Mathematical Methods of Operations Research $81(1)$, $27 - 52$,2015.

7. A static model in single-leg flight airline revenue management (with S.O., Sezer and B.P., Pourghannad), Transportation Science 51 (1), $214-232$, 2017, ISSN $0041 - 1655$ (print).

8. Order and exit decisions under non-decreasing price curves for products with short life cycles (with Canan Pehlivan and Semih Onur Sezer), Mathematical Methods of Operations Research 90, $365 - 397$, 2019.

Topic: Spare parts management

1. On spare parts demand and the installed base concept: A theoretical approach (with A.Amniattalab and M.Hekiomoğlu) International Journal of Production economics 266, December 2023, article 109043

Topic: Worst case analysis of Algorithms.

1. A hybrid next-fit algorithm for the two-dimensional rectangle bin packing problem (with G.Galambos), Computing $39, 201 - 217, 1987$.

2. A dual version of the binpacking problem (with J.Csirik), Algorithms Review $1, 87 - 95, 1990$.

3. On the multidimensional vector binpacking (with J.Csirik, M.Labbe and S.Zhang), Acta Cybernetica $9, 361 - 369, 1990$.

4. Heuristics for the 0-1 min-knapsack problem (with J.Csirik, M.Labbe and S.Zhang), Acta Cybernetica $10, 15 - 20, 1991$.

5. A simple proof of Liang's lower bound for on-line bin packing and the extension to the parametric case (with G.Galambos), Discrete Applied Mathematics $41, 173 - 178, 1993$.

6. Two-dimensional rectangle packing:on-line methods and results (with J.Csirik and M.Labbe), Discrete Applied Mathematics $45, 197 - 204, 1993$.

7. Improved Algorithms for machine allocation in manufacturing systems (with M.Labbe, M. van Vliet and S.Zhang), Operations Research $42, 523 - 530, 1994$

8. Two simple algorithms for bincovering (with J.Csirik, S.Zhang and M.Labbe) Acta Cybernetica $14, 13 - 25, 1999$.

2 Publications in Proceedings.

1. On noncooperative games and minimax theory (with G.Kassay), Proceedings of the 4th Twente workshop on Cooperative Game theory joint with 3rd Dutch-Russian symposium, CTIT Workshop Proceedings, $61 - 69, 2005$.

3 Book Chapters.

1. The theory for convex/quasiconvex functions and its application to optimization (with D.M.L.Dias and J.Gromicho), Lecture Notes in Economics and Mathematical Systems, Vol. 405, ed. S.Komlosi, T.Rapcak and S.Schaible, $153 - 170$, Springer Verlag, Berlin, 1994.

2. A deep cut ellipsoid algorithm and quasiconvex programming (with J. Gromicho, F.Plastria and S.Zhang), Lecture Notes in Economics and Mathematical Systems, Volume 405, ed. S.Komlosi, T.Rapcak and S. Schaible, $62 - 76$, Springer Verlag, Berlin, 1994.

3. An elementary rate of convergence proof for the deep cut ellipsoid algorithm (with J. Gromicho), In recent Advances in Nonsmooth Optimization, eds. D-Z.Du, L.Qi and R.S Womersley, World Scientific Publishers, $106 - 120, 1995$

4. How to determine maintenance frequencies for multi-component systems? A general Approach. (with R.Dekker and R.E.Wildeman), in Reliability and maintenance of complex Systems (NATO ASI series), editor: S.Özekici, $239 - 280$, Springer Verlag, Berlin, 1996.

5. A general approach for the coordination of maintenance frequencies (with R. Dekker, R.E. Wildeman and R. van Egmond), in Maintenance, modelling and optimization, editors: S.O. Duffuaa and A. Raouf, $245 - 282$, Kluwer Academic Publishers, Boston, 2000.

6. Fractional Programming (with S.Schaible), in Encyclopedia of Optimization vol II, editors: C.A. Floudas and P.M. Pardalos, $162 - 172$, Kluwer Academic Publishers, Dordrecht, 2001, ISBN $0 - 7923 - 7027 - 9$.(on invitation)

7. Introduction to convex and quasiconvex analysis (with G.Kassay), Chapter 1 in Handbook of Generalized Convexity and Generalized Monotonicity, editors N. Hadjisavvas, S. Komlósi and S. Schaible, $3 - 87$, series Nonconvex Optimization and Its Applications vol 76, Springer Verlag, 2004, ISBN $0 - 387 - 23255 - 9$. (on invitation)

8. On noncooperative games and minimax theory (with G.Kassay), Proceedings of the 4th Twente workshop on Cooperative Game theory joint with 3rd Dutch-Russian symposium, CTIT Workshop Proceedings, $61 - 69, 2005$.

9. Modeling imperfect maintenance of coating systems protecting steel structures (with R.P.Nicolai), In Safety and Reliability for managing risk, editors Guedes Soares & Zio, $563 - 570$, Taylor & Francis Group, 2006. (on invitation)

10. On noncooperative games, minimax theorems and equilibrium problems (with G.Kassay (Cluj)) Pareto Optimality, Game Theory and Equilibria, editors Athanasios Migdalas (Crete), Panos Pardalos (Florida), Leonidas Pitsoulis (London) and Altannar Chinchuluun (Florida), 211-255, Series: Springer Optimization and Its Applications vol 17, Springer Verlag, New York, 2008, ISBN: 978-0-387-77246-2 (on invitation)

11. Risk measures and Their Application in Asset Management, (with Ş.Ĭ. Birbil, N. Noyan and B. Kaynar), Chapter 15 of The VAR IMPLEMEN-TATION HANDBOOK (editor G.N.Gregoriou, McGraw Hill, 2009. (on invitation)

12. Generalizing the Ordering cost and Holding-Backlog Cost Rate Functions in EOQ-type Inventory Models (with M, Kaya and B, Pourghannad), In Handbook of EOQ Inventory Problems (Stochastic and Deterministic Models and Applications), editor Tsan-Ming Choi,79-120 Series: International Series in Operational Research and Management Science, Springer Verlag, New York 2014, ISBN 978-1-4614-7638-2.

13. On the Principle of Lagrange in Optimization Theory and its applications in Transportation and Location Problems (with S. Javadi)r In New Perspectives in Operations Research and Management Science (Essays in honor of Fusun Elegin), editors Y. İlker Topcu et al page $31-67$. International Series in Operations Research and Management Science volume 326, Springer Verlag, 2022, ISBN 978-3-030-91850-7

4 Books.

1. High Performance Optimization, editor (with S.Zhang, K.Roos, T. Terlaky), series Applied Optimization vol 33, Kluwer Academic publishers, Dordrecht, 2000.

2. On Banach algebras, Renewal Measures and Regenerative Processes, CWI tract 38 Center for Mathematics and Computer Science, Amsterdam, 1987 (ISBN 90 6196 321 4)

Working papers

1. On Banach algebras, Subexponential Distributions and Renewal Theory (with D.van Dulst), report $84-20$, Department of Mathematics, University of Amsterdam, 1984.

2. Renewal theory and completely monotone functions, report $8759/A$, Econometric Institute, EUR, 1987.

3. On purchase timing models in marketing (with S.Zhang), Report 9720/A, Econometric Institute, Erasmus university, 1997

4. Inventory Control and Regenerative Processes: Theory (with E.Bazsa, P, den Iseger), Report $9931/A$ Econometric institute, Erasmus University, 1999.

5. Inventory Control and Regenerative Processes: Computations (with E., Bazsa, P, den Iseger), Report $9932/A$ Econometric institute, Erasmus University, 1999.

6. Generalized fractional programming with user interaction (with Ş.Ĭ.Birbil and S.Zhang), 2004, working paper.

7. Approximating the randomized hitting time distribution of a non-stationary gamma process (with R.Nicolai), Report Econometric Institute, Erasmus university Rotterdam, 2007.

8. A note on the dual of an unconstrained (generalized) geometric programming problem (with G.Still), 6 pages, working paper 2007.

Ph.D students

1. S. Zhang, Title Thesis: Stochastic Queue Location Problems, Tinbergen Institute Research Series, Thesis Publishers, Amsterdam, June 1991. (second Prize COLA competition ORSA-TIMS 1992), Erasmus University, presently Professor at University of Minnesota, Minnesota, USA

2. J. Gromicho, Title Thesis: Quasiconvex Optimization and Location Theory, Tinbergen Institute Research Series, Thesis Publishers, Amsterdam, January 1995, appeared as book at Kluwer publishers under the same title, Presently Professor at Free university Amsterdam, Amsterdam, The Netherlands.

3. A.I. Barros, Title Thesis: Discrete and Fractional Programming Techniques for Location Models, Tinbergen Institute Research Series, Thesis Publishers, Amsterdam, January 1995. (First Prize SOLA competition ORSA-TIMS 1995), appeared as book at Kluwer publishers under the same title.

4. R. Wildeman, Title Thesis: The Art of Grouping Maintenance, Tinbergen Institute Research Series, Thesis publishers, Amsterdam, October 1996, Erasmus University.

5. M.J.Kleijn, Title Thesis: Demand Differentiation in Inventory Sytems, Tinbergen Institute Research Series, Thesis Publishers, Amsterdam, December 1998, Erasmus University

6. E. Oldenkamp-Bazsa, Title Thesis: Decision Support for Inventory Models with Complete Backordering, Tinbergen Institute Research series, Thesis Publishers, Amsterdam, ISBN-90-5170-840-8, June 2002, Erasmus University.

7. R. Nicolai, Title Thesis: Maintenance Models for Systems subject to Measurable Deterioration, Tinbergen Institute Research Series, Thesis publishers, Amsterdam, ISBN 978-90-5170-997-1, March 2007, Erasmus University.

8. C.Pince, Title Thesis: Advances in Inventory Management (Dynamic Models) ERIM publishers, ISBN978-90-5892-243-4, June 2010, Erasmus University, presently Associate Professor at Loyola University,Quinlan School of Business, Chicago, USA.

9. M Pourakbar, Title Thesis: End of Life Inventory Decisions for Service Parts, ERIM publishers (ISBN 978-90-5892-297-7, December 2011, Erasmus University, presently Associate Professor at Rotterdam School of Management, EUR, Rotterdam, The Netherlands

10. N. Aydin, Title Thesis: New Capacity Allocation Policies in Revenue Management, August 2014, Sabanci University (joint supervision with Ilker Birbill), presently Associate Professor at University of Warwick, Warwick, England

11. S. Javadi Khattab, Title thesis: On the End of life Inventory Problem, August 2018, Sabanci University (joint supervision with Semih Onur Sezer), presently Assistant Professor Isik University, Şile,Turkey

12. M. Ebadi, Title thesis: Optimal Policies for cervical cancer prevention,June 2021, Sabanci University (joint supervision with Raha Akhavan Tabatabaei (SOM Sabanci university).

13. A. Ammiattalab, Title thesis: Estimating the number of failures and the spare parts demand-an installed base approach, December 2023, Sabanci University (joint supervision with Mustafa Mustafa Hekimoğlu)

Scholarschips and other activities.

1. Grant of the Netherlands Organization for Advance of Pure Research (Z.W.O.) during academic year $1983 - 1984$.

2. Fulbright grant of the Netherlands America Commission for Educational Exchange, 1984.

3. Erasmus grant (for exchange program) with the University of Lisbon and Coimbra, 1989.

4. Contractor and organizer (with J. Csirik) of TEMPUS program JEP-$0115 - 90/1$, reconstruction computer Science program at the University of Szeged in Hungary (J.Csirik), in cooperation with University of Utrecht (V. Leeuwen), Stuttgart (Knodel) and Dortmund (Wegener).

5. Contractor and organizer (with J. Csirik) of TEMPUS program JEP $0115 - 91/1$ in cooperation with University of Utrecht (v. Leeuwen), Stuttgart (Reuter), Dortmund (Wegener) and Warwick (Paterson).

6. Coordinator student exchange program $91/92$ within Lessius network with University of Lisboa and Coimbra and TEMPUS exchange program with Szeged.

7. Participant in post-Tempus project $1993 - 1995$ with the University of Szeged, Hungary.

8. Member International Scientific Committee of the working group on generalized convexity, $1996 - 2000$.

9. Member Organization committee three days workshop High Performance Methods in Mathematical Optimization, World Trade Center, Rotterdam, june 1997.

10. Member Program committee Vth International workshop on generalized Convexity july, Marseille, june 1996.

11. Member Organization committee three days workshop High Performance Methods in Mathematical Optimization, World Trade Center, Rotterdam, june 1999.

12. Organizer and teacher at Summer school on Generalized Convexity, VIth International workshop on generalized convexity, Samos, Greece, august 1999.

13. Member Organization committee two days workshop Smooth and Non-smooth Optimization, july $12 - 13, 2001$, Rotterdam.

14. External advisor Thesis Pedram Sahba. title: A stochastic Process Study of Two-Echelon Supply Chain with Bulky Demand incorporating Cost Sharing Coordination Strategies, Department of Mechanical and Industrial Engineering Faculty of Applied Science and Engineering, University of Toronto, Canada, 2012.

15. Member Organizing committee INFORMS Revenue Management and Pricing Conference, June 4-6 2014, Istanbul

16. Member Ph.D committee Birol Yüceoglu, Title thesis: Branch and cut algorithms for graph problems, University of Maastricht (Holland), February 2015.

Awards

- Supervisor of former Ph.D student S. Zhang winner of second price SOLA competition ORSA-TIMS 1992, Title Thesis: Stochastic queue location problems.

- Supervisor of former Ph.D student A.I. Barros winner of SOLA competition ORSA-TIMS 1995, Title Thesis: Discrete and Fractional Programming Techniques for Location Models

- Wickham Skinner best paper award published in Production and Operations Management 2012.

- Supervisor of Behrooz Pourghannad winner of the best student presentation competition in the Aviation section of INFORMS 2017 (INFORMS meeting Houston) based on the joint paper A static model in single-leg flight airline revenue management (with S.O., Sezer and B.P., Pourghannad), Transportation Science 51 (1), 214-232, 2017.

Teaching activities

1. **Econometric Institute, Erasmus University, Rotterdam** $(1979-1983)$ courses on parametric statistics (boek R.V. Hogg and A.T. Craig, Introduction to mathematical statistics, MacMillan, 1970) and Markov processes (level W.Feller, Introduction to Probability Theory and its applications, volume 1, Wiley, 1970) and Probability theory and Martingales (coursenotes level S.Karlin and H.M. Taylor, a first course in stochastic Processes, Academic Press, 1975)

2. **Department of Industrial Engineering and Operations Research, University of California, Berkeley,** $(1983-1984)$.
   Undergraduate course Introduction to Operations Research techniques (level Hillier and Lieberman, Introduction to Operations Research, McGraw-Hill)

3. **Department of Mathematics, TU Eindhoven,** $(1985 - 1986)$.
   Courses (for mathematics students) on Markov and regenerative stochastic processes (level E. Çinlar, Introduction to Stochastic Processes, Prentice Hall, 1975, queueing theory and simple network models (level Kleinrock, Queueing systems, volume 1, Wiley, 1975), game theory. Course (for management science students) introduction to applied stochastic models (level Hillier and Lieberman.)

4. **Econometric Institute, Erasmus university, Rotterdam** $(1987-2009)$
   In the past courses for econometrics students on inventory control (E.A. Silver, D.F. Pyke and R. Peterson, Inventory management and production planning and scheduling, Wiley 1998 and course notes), location theory (course notes: level R.L. Francis, J.A. White, Facility layout and location, an analytical approach, Prentice Hall, 1974), convex analysis (course notes: level R.T. Rockafellar, convex analysis, Princeton university Press, 1972), applied stochastic processes (several books of Ross) and applications of deterministic OR techniques (level Hillier and Lieberman), statistics for economists (book P.W. Newbold, Statistics for business and economics).
   Presently taught courses:

   - **Statistical techniques of Simulation**, first block: september-october (8 weeks, 4 hours a week), literature S.M. Ross, Simulation (3rd edition), Academic Press and course notes, second year bachelor econometrics.

   - **Combinatorial Optimization**, first block: september-october (8 weeks, 6 hours a week), literature L. Wolsey, Integer Programming, Wiley, 1998 and course notes, second year bachelor econometrics.

   - **Stochastic Models and Optimization**, first block (8 weeks, 4 hours a week), literature H.C. Tijms, A first course in Stochastic Models,Wiley, New York, 2003 and course notes, master logistics econometrics.

   - **Markov processes**, fourth block: march-april (8 weeks, 4 hours a week, literature S.M.Ross, Introduction to Probability Models, edition 8, Academic Press, 2003 and course notes, second year bachelor econometrics.

   - part of course **Intelligent decision analysis**, first trimester 3th year bachelor Economics and Informatics, topic: Introduction to linear, integer and dynamic programming and modeling, literature:Hillier

and Lieberman, An introduction to Operations Research. McGraw Hill, Edition 7

- part of course **Topics in Operations Research and Logistics**, fourth block march-april (8 hours): topic: Revenue management, literature course notes: models in revenue management and discussion papers from literature by students, masters logistics econometrics.

5. **LNMB course for all Ph.D students Operations Research in Holland, Utrecht University 2007-2008** Course Revenue management (20 hours), literature Talluri, Van Ryzin, The theory and practice of revenue management, Kluwer Academic Publishers, 2004 and course notes

6. **Sabanci university**: 2009-present (main courses taught)

   - Undergraduate third year core course Deterministic models in Operations Research (MS301). Course material: course notes and part I basic Theory of the book V. Chvatal, Linear programming, Freeman,1999, ISBN 0-7167-1195-8.

   - Graduate core course stochastic processes (IE503). Course material: course notes and first 5 Chapters of the book S.M.Ross, Stochastic Processes (2nd edition), Wiley, New York,1996, ISBN 0-471-12062-6

   - Undergraduate second year core course Probability Theory (MATH 203) (with Semih Sezer). Course material: course notes and first 8 chapters of the book I.Miller and M.Miller, John E Freunds Mathematical Statistics with Applications (Edition 8) Pearson, Boston, 2014, ISBN 0-321-90440-0

   - Undergraduate third year core course Stochastic Processes (MS 302) (two sections with Semih Sezer) Course material: course notes and first 8 chapters of the book S.M.Ross, Introduction to Probability Models Edition 10, ISBN 978-0-12-375686-2

   - Graduate Ph.D course Markov Dynamic Programming (with Semih Sezer) IE605 Course material: course notes Markov Decision Processes on metric spaces and parts of the book M.Puterman, Markov Decision Processes, Wiley, 2005, ISBN 0-471-72782-2 Graduate Ph.D course Markov Dynamic Programming

   - Graduate master course Applications of Markov decision processess (with Raha Taba Akhavan Tabatabaei)

- Undergraduate course Decision Sciences (IE405). Coursematerial: course notes Probability theory and its connection to decision Sciences