

Curriculum Vitae

Dr. Mehdi Karimi-Nasab



A. Personal information

Date of birth: 11/Jul/1984

Place of birth: Tehran, Iran

Emails: mehdi.karimi-nasab@uni-hamburg.de,
mehdikariminasab@gmail.com

University Url: <https://www.bwl.uni-hamburg.de/en/or/team/mehdi-karimi-nasab.html>

Personal Url: <http://webpages.iust.ac.ir/mehdikariminasab/main.html>

B. Academic experience and education

Jan/2015 - now

Post-Doc & Habilitation at the Institute for Operations Research
University of Hamburg

Sep/2009 – Jul/2013

PhD in Industrial Engineering

Iran University of Science and Technology

Thesis: *Production scheduling of multi-level products and different items' process maps*

Supervisor: Prof. S.M. Seyedhoseini, Late Prof. M.B. Aryanezhad

Co-Advisors: Prof. M. Modarres Yazdi, Dr. M. Heidari

Final thesis score (0-20): 19.5

GPA: 3.83 out of 4 (18.25 out of 20)

Sep/2007 – Sep/2009

Master of Science in Industrial Engineering

Iran University of Science and Technology

Thesis: *Production smoothing under process compressibility*

Final thesis score (0-20): 20

GPA: 4 out of 4 (18.77 out of 20)

Sep/2002 – Jul/2007

Bachelor of Science in Industrial Engineering

Islamic Azad University, South Tehran Branch

Thesis: *Production planning of SAMAND production line by simulation*

Final thesis score (0-20): 20

GPA: 3.85 out of 4 (17.90 out of 20)

C. Skills

C1. Language skills

Persian	level: native
English	level: advance (C1)
German	level: upper intermediate (B2-C1)
French	level: intermediate (B1)

C2. Computer skills

MATLAB	level: intermediate (programming, optimization, statistical analysis, ...)
CPLEX	level: advance (programming, optimization, ...)
VB.net	level: intermediate (programming, ...)
GAMS	level: intermediate (modeling, optimization, ...)
LINGO	level: intermediate (modeling, optimization, ...)
Minitab	level: intermediate (statistical test of hypothesis, descriptive statistics, ...)
MSP	level: intermediate (CPM analysis, WBS analysis, resource scheduling, ...)
MS office	level: advance (Excel, Word, Power point, ...)

D. Professional activities

D1. Non-academic work experience

Mar/2011 to Apr/2012

Research staff in the project of “Developing a comprehensive software for conceptual design of container vessels by means of genetic algorithm” at Organization of Naval Industries.

Jul/2008 to Dec/2008

Strategic management consultant at Pooyesh Bargh co.

Oct/2007 to May/2008

System analyst at Kamyaran co.

Jun/2007 to Sep/2007

Member of project control team at Sarouj Bana co inc.

Jul/2006 to Jan/2007

Member of simulation team for Kanban system in Samand production line at IranKhodro co.

D2. Referee/ Reviewer in scientific journals

1. *International journal of systems science: Operations & logistic (official editorial board)*

2. *European journal of operational research*
3. *Operations research letters*
4. *Computers & industrial engineering*
5. *International journal of production research*
6. *Applied soft computing*
7. *European journal of industrial engineering*
8. *Applied mathematical modeling*
9. *Journal of industrial engineering international*
10. *Engineering optimization*
11. *Journal of manufacturing systems*
12. *European journal of industrial engineering*
13. *International Journal of Industrial Engineering & Production Research*

D3. Teaching experience

	Course	University	Department	Level	Position	Start	Finish
1	Probability theory	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Sep 2009	Jan 2010
2	Statistical quality control	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Sep 2009	Jan 2010
3	Operations research II	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Feb 2010	Jun 2010
4	Engineering statistics	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Feb 2010	Jun 2010
5	Operations research II	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Jul 2010	Sep 2010
6	Engineering statistics	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Jul 2010	Sep 2010
7	Production planning	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Sep 2010	Jan 2011
8	Inventory control	Islamic Azad university-South Tehran branch	Industrial Engineering	BS	lecturer	Sep 2010	Jan 2011
9	Discrete mathematics	Kharazmi University	Software Engineering	BS	lecturer	Sep 2012	Jan 2013
10	Linear algebra	Ghom University	Industrial Engineering	BS	lecturer	Sep 2012	Jan 2013
11	Operations research II	Ghom University	Industrial Engineering	BS	lecturer	Sep 2012	Jan 2013
12	Expert systems	Ghom University	Software Engineering	BS	lecturer	Feb 2013	Jun 2013
13	Design of algorithms	Iran University of Science and Technology	Software Engineering	BS	lecturer	Feb 2013	Jun 2013
14	Engineering statistics	Iran University of Science and Technology	Railway Engineering	BS	lecturer	Feb 2013	Jun 2013

	Course	University	Department	Level	Position	Start	Finish
15	System dynamics	Payame Nour University	Industrial Engineering	MS	lecturer	Sep 2013	Jan 2014
16	Mathematical programming	Payame Nour University	Industrial Engineering	MS	lecturer	Sep 2013	Jan 2014
17	System dynamics I	Payame Nour University	System Engineering	MS	lecturer	Sep 2013	Jan 2014
18	Multi-criteria decision making	Khatam University	Financial Engineering	MS	lecturer	Sep 2013	Jan 2014
19	Expert systems	Kharazmi University	IT Engineering	MS	lecturer	Feb 2014	Jun 2014
20	Production planning	Alzahra University	Industrial Engineering	BS	lecturer	Feb 2014	Jun 2014
21	Design and analysis of heuristics	University of Hamburg	Operations Research	MS	lecturer	Apr 2015	Jul 2015
22	Nonlinear programming	University of Hamburg	Operations Research	MS	lecturer	Oct 2015	Jan 2016
23	Multi-objective optimization	University of Hamburg	Operations Research	MS	lecturer	Apr 2016	Jul 2016
24	Design and analysis of approximation algorithms	University of Hamburg	Operations Research	MS	lecturer	Oct 2016	Jan 2017
25	Tutorial to “introduction to operations research”	University of Hamburg	Operations Research	BS	lecturer	Apr 2017	Jul 2017

E. Publications

E1. Books

1. K. Eshghi, M. Karimi-Nasab, "*Analysis of algorithms and design of metaheuristics*", Publisher: Sharif University Press, Tehran, 2017. (In Persian)
2. K. Eshghi, M. Karimi-Nasab, "*Graph theory: Algorithms and applications*", Publisher: Nashre Ketabe Daneshgahi, Tehran, 2017. (In Persian)
3. K. Eshghi, M. Karimi-Nasab, "*Combinatorial optimization and metaheuristics*", Publisher: Azarin mehr, Tehran, 2014. (In Persian)
4. S. Raissi, M. Karimi-Nasab, "*Mathematical modeling by computers*", Publisher: Islamic Azad University-South Tehran branch, Tehran, 2007. (In Persian)
5. M.R. Pirestani, K. Malekzadeh, M. Karimi-Nasab, "*A first course in genetic algorithm*", Publisher: Islamic Azad University-South Tehran branch, Tehran, 2008. (In Persian)

E2. ISI journals

1. D. Shishebori, M. Karimi-Nasab, L.V. Snyder, "A two-phase heuristic algorithm for designing reliable capacitated logistics networks under disruptions." *European Journal of Industrial Engineering*, 2017, accepted for publication. (journal impact factor: 0.718)
2. S. Dowlatshahi, M. Karimi-Nasab, H. Bahrololum, "A group decision-making approach for supplier selection in configuration design: A case study." *International Journal of Advanced Manufacturing Technology*, 2015, Vol. 81, No. 5, pp. 1139-1154. (journal impact factor: 1.458)
3. M. Karimi-Nasab, M. Modarres, "Lot sizing and job shop scheduling with compressible process times: A cut and branch approach." *Computers & Industrial Engineering*, 2015, Vol. 85, pp. 196-205. (journal impact factor: 1.783)
4. M. Karimi-Nasab, M., Modarres, S.M., Seyedhoseini, "A self-adaptive PSO for joint lot sizing and job shop scheduling with compressible process times." *Applied Soft Computing*, 2015, Vol. 27, pp. 137-147. (journal impact factor: 2.810)
5. M. Karimi-Nasab, H.M. Wee, "An inventory model with truncated exponential replenishment intervals and special sale offer." *Journal of Manufacturing Systems*, 2015, Vol. 35, pp. 246–250. (journal impact factor: 1.682)
6. O. Kheirandish, R. Tavakkoli-Moghaddam, M. Karimi-Nasab, "An artificial bee colony algorithm for a two-stage hybrid flowshop scheduling problem with multilevel product structures and requirement operations." *International Journal of Computer Integrated Manufacturing*, 2015, Vol. 28, No. 5, pp. 437-450. (journal impact factor: 1.012)
7. M. Karimi-Nasab, K. Sabri-Laghaie, "Developing approximate algorithms for EPQ problem with process compressibility and random error in production / inspection." *International Journal of Production Research*, 2014, Vol. 52, No. 8, pp. 2388-2421. (journal impact factor: 1.477)
8. M. Karimi-Nasab, S.M. Seyedhoseini, "Multi-level lot sizing and job shop scheduling with compressible process times: A cutting plane approach." *European Journal of Operational Research*, 2013, Vol. 231, No. 3, pp. 598-616. (journal impact factor: 2.358)
9. M. Karimi-Nasab, S.M. Seyedhoseini, M. Modarres, M. Heidari, "Multi-period lot sizing and job shop scheduling with compressible process times for multi-level

- product structures.*” International Journal of Production Research, 2013, Vol. 51, No. 20, pp. 6229-6246. (journal impact factor: 1.477)
10. M. Karimi-Nasab, S. Dowlatshahi, H. Heidari, “A multi-objective distribution-pricing model for multi-period price-sensitive demands.” IEEE Transactions on Engineering Management, 2013, Vol. 60, No. 3, pp. 640 - 654. (journal impact factor: 0.938)
 11. M. Karimi-Nasab, I. Konstantaras, “An inventory control model with stochastic review interval and special sale offer.” European Journal of Operational Research, 2013, Vol. 227, pp. 81-87. (journal impact factor: 2.358)
 12. M. Karimi-Nasab, S.M.T. Fatemi Ghomi, “Multi-objective production scheduling with controllable processing times and sequence-dependent setups for deteriorating items.” International Journal of Production Research, 2012, Vol. 50, No. 24, pp. 7378-7400. (journal impact factor: 1.477)
 13. E. Noorollahi, M. Karimi-Nasab, M.B. Aryanezhad, “An economic production quantity model with random yield subject to process compressibility.” Mathematical and Computer Modelling, 2012, Vol. 56, pp. 80–96. (journal impact factor: 1.412)
 14. M. Karimi-Nasab, I. Konstantaras, “A random search heuristic for a multiple-objective production planning.” Computers & Industrial Engineering, 2012, Vol. 62, pp. 479–490. (journal impact factor: 1.783)
 15. M. Karimi-Nasab, M.B. Aryanezhad, “A multi-objective production smoothing model with compressible operating times.” Applied Mathematical Modelling, 2011, Vol. 35, pp. 3596-3610. (journal impact factor: 2.251)
 16. M.B. Aryanezhad, H. Sahebi, M. Karimi-Nasab, “A JIT discount inventory model for multi-stage supply chain.” Kuwait Journal of Science and Engineering, 2010, Vol. 37, No. 1B, pp. 225-250. (journal impact factor: 0.093)

E3. ISC and/or other journals

1. M. Karimi-Nasab, D. Shishebori, S.G.R. Jalali-Naini, “Multi-objective optimisation for pricing and distribution in a supply chain with stochastic demands.” International Journal of Industrial and System Engineering, 2013, Vol. 13, No. 1, pp. 56-72.
2. M. Karimi-Nasab, H. Haddad, H. Feili, M.H. Babaie, (in Persian) “Solving a batching-scheduling problem on a multi-operational parallel machine using two metaheuristic algorithms.” International Journal of Industrial Engineering & Production Management, 2013, Vol. 24, No. 2, pp. 225-237
3. M. Karimi-Nasab, H. Haddad, P. Ghanbari, “A simulated annealing for the single machine batch scheduling with deterioration and precedence constraints.” Asian Journal of Industrial Engineering, 2012, Vol. 4, No. 1, pp. 1-16.
4. M. Karimi-Nasab, U. Bahalke, H.R. Faili, A. Sheikhzadeh, K. Dolatkahi, “Working time evaluation in assembly lines.” International Journal of Mathematics in Operational Research, 2012, Vol. 4, No. 1, pp. 1-17.
5. M.B. Aryanezhad, H. Malekly, M. Karimi-Nasab, “A fuzzy random multi-objective approach for portfolio selection.” Journal of Industrial Engineering International, 2011, Vol. 7, No. 13, pp. 12-21.
6. M.B. Aryanezhad, M. Karimi-Nasab, S.M.T. Fatemi Ghomi, “Building a multi-objective model for multi-product multi-period production planning with controllable processing times: A Real Case Problem.” Journal of Optimization in Industrial Engineering, 2009, Vol. 2, No. 4, pp. 1-11.

7. M.B. Aryanezhad, M. Karimi-Nasab, S. Bakhshi, "Multiple batch sizing through batch size smoothing." *Journal of Optimization in Industrial Engineering*, 2009, Vol. 2, pp. 11-17.

E4. Conferences

1. M. "Multi-objective formulation of a multi-attribute decision making problem." Annual international conference of the german operations research society, Hamburg, Germany, 2016.
2. M. Karimi-Nasab, "A multi-period production-inventory planning model for multi-products with fixed shelf life." 27th European conference on operational research, Glasgow, UK, 2015.
3. O. Kheirandish, R. Tavakkoli-Moghaddam, M. Karimi-Nasab, "A single machine lot scheduling model with considering processing times as decision variables." 8th International industrial engineering conference, Tehran, Iran. 2012.
4. M. Karimi-Nasab, M.R. Ghodoosi, "A multi-level production scheduling model for two stage flowshop." 13th conference of BALCOR, Greece. 2011.
5. M. Karimi-Nasab, I. Konstantaras, "A single machine production scheduling model with variable processing times." 13th conference of BALCOR, Greece. 2011.
6. D. Shishebori, M. Karimi-Nasab, S.J. Sadjadi, "Optimal pricing strategy for local distribution centers." 9th International management conference, Tehran, 2011.
7. M. Karimi-Nasab, B. Shah-Hoseini, "A new approach for project resource scheduling with activity compressibility." 40th conference on computers and industrial engineering (CIE 40), Awaji, Japan, 2010.
8. M.B. Aryanezhad, S.M. Ghoreyshi, M. Karimi-Nasab, E. Noorollahi, "A new lot sizing model for deteriorating items with production compressibility." 40th conference on computers and industrial engineering (CIE 40), Awaji, Japan, 2010.
9. M.B. Aryanezhad, E. Noorollahi, M. Karimi-Nasab, S.M. Ghoreyshi, "Batch sizing with random yield and imperfect inspection and process compressibility." 40th conference on computers and industrial engineering (CIE 40), Awaji, Japan, 2010.
10. F. Barzinpour, M.B. Aryanezhad, M. Karimi-Nasab, "A new lot sizing model for controllable processing times and inventory deterioration." 40th conference on computers and industrial engineering (CIE 40), Awaji, Japan, 2010.
11. S.K. Afghah, S. Masoudi, M. Karimi-Nasab, "A new production-inventory model for deteriorating items with FIFO replenishment policy." 11th Asia pacific industrial engineering and management systems conference (APIEMS), Melaka, Malaysia, 2010.
12. A. Pourkazemi, S.M. Ghoreyshi, M. Karimi-Nasab, "A possibilistic programming model for R&D project portfolio selection in fuzzy environments." 11th Asia pacific industrial engineering and management systems conference (APIEMS), Melaka, Malaysia, 2010.
13. M.B. Aryanezhad, E. Noorollahi, M. Karimi-Nasab, S.M. Ghoreyshi, "Multi-product lot sizing under imperfect production with rework option." 3rd International conference of iranian operations research society, Tehran, Iran, 2010.
14. H. Bahrololoom, M. Karimi-Nasab, "A new group decision making method in supplier selection for prototype generation." 3rd International conference of iranian operations research society, Tehran, Iran, 2010.
15. M.B. Aryanezhad, S.M. Ghoreyshi, M. Karimi-Nasab, E. Noorollahi, "A new multi-product model for deteriorating items with seasonal markets." 3rd International conference of iranian operations research society, Tehran, Iran, 2010.

16. F. Barzinpour, M.B. Aryanezhad, M. Karimi-Nasab, "A *tabu search algorithm for lot sizing problem with controllable processing times.*" 3rd International conference of iranian operations research society, Tehran, Iran, 2010.
17. M.B. Aryanezhad, A. Soudi, M. Karimi-Nasab, "A *two period model for multi-stage multi-product production planning with random yield.*" 3rd International conference of iranian operations research society, Tehran, Iran, 2010.
18. M. Karimi-Nasab, A. Pakgozar, "Multi-period multi-product production planning with controllable processing times for deteriorating items." IIE annual conference and expo, Cancun, Mexico, 2010.
19. M.B. Aryanezhad, A. Soudi, M. Karimi-Nasab, "A *multi-objective model for multi-stage multi-product imperfect production with rework possibility.*" IIE annual conference and expo, Cancun, Mexico, 2010.
20. M.B. Aryanezhad, S. Talebi, M. Karimi-Nasab, "A *new approach for production scheduling with compressible processing times.*" IIE annual conference and expo, Cancun, Mexico, 2010.
21. A. Soudi, M.B. Aryanezhad, M. Karimi-Nasab, "A *multi period model for multi-stage multi-product production planning with random yield and compressible processing time.*" 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
22. A.H. Ebrahimian, M.B. Aryanezhad, S.M. Ghoreyshi, M. Karimi-Nasab, E. Noorollahi, "Lot sizing problem with production compressibility for deteriorating items." 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
23. D. Moradinezhad, M.B. Aryanezhad, E. Noorollahi, M. Karimi-Nasab, S.M. Ghoreyshi, "Multiproduct single-stage lot sizing with random yield, imperfect inspection, process compressibility, and partial backordering." 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
24. D. Shishebori, S.G. Jalali-Naini, M. Karimi-Nasab, "A *new multi-objective approach for pricing and distribution in a supply chain.*" 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
25. M. Karimi-Nasab, B. Shah-Hoseini, "Modeling project resource scheduling problem with activity compressibility." 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
26. M.B. Aryanezhad, S. Talebi, M. Karimi-Nasab, "Flow shop production scheduling problem with compressible processing times." 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
27. E. Maneshi, M.B. Aryanezhad, U. Bahalke, M. Karimi-Nasab, A.M. Yolmeh, "Minimizing working time in the straight assembly line with deteriorating tasks." 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
28. S.M.T. Fatemi Ghomi, U. Bahalke, M. Karimi-Nasab, "Bi-objective assembly line balancing with flexible machines." 24th European conference on operational research (EURO XXIV), Lisbon, Portugal, 2010.
29. M.B. Aryanezhad, M. Karimi-Nasab, "A *multi-objective approach for production smoothing problem.*" 2nd International conference of iranian operations research society, Babolsar, Iran, 2009.
30. F. Firouzi, M. Karimi-Nasab, A. Zareei, "Combination of *tabu search and LP-metric for solving a single machine bi-criteria scheduling problem.*" 2nd International conference of iranian operations research society, Babolsar, Iran, 2009.

31. H. Malekly, M. Karimi-Nasab, R. Tavvakoli-Moghaddam, (in Persian) “*Fuzzy modeling for evaluating investments in project financial supports.*” 6th International management conference, Tehran, 2008.

F. Research interests

F1. " Design and analysis of optimization algorithms ", including the following topics:

- Design of approximate algorithms (e.g. FPTAS, PTAS, rounding methods, primal-dual methods, ...)
- Design of stochastic algorithms (e.g. Monte Carlo algorithms, Las Vegas algorithms, ...)
- Partial enumeration algorithms (e.g. Branch and Bound algorithms, Dynamic programming algorithms, Divide and Conquer algorithms, Decomposition algorithms, ...)
- Gradient-based search algorithms for unconstrained nonlinear problems (e.g. Newton, Golden section, Broyden, BFGS, Conjugate directions, SQP, ...)
- Non gradient-based search algorithms for unconstrained nonlinear problems (e.g. Fibonacci, Three points, ...)
- Algorithms for constrained LP/ NLP problems (e.g. Simplex, Elipsoid, Active set, Frank-Wolfe, ...)
- Algorithms for multi-objective problems (e.g. EMOAs, Geoffrion, ...)
- Algorithms for multi-criteria decision making problems (e.g. Non-interactive methods, interactive methods, Goal seeking, ...)
- Greedy and Local search algorithms
- Hybrid algorithms
- Parallel algorithms
- Heuristic algorithms (e.g. Hyper-heuristics, Meta-heuristics, ...)

F2. " Combinatorial optimization and Computational complexity ", including the following topics:

- Analyzing complexity class of new optimization problems
- Run time complexity analysis of algorithms (e.g. Worst/ average/ best case analysis, recursive analysis, ...)
- Improving the time/ space complexity of algorithms
- Integer programming modeling of real problems (e.g. Linearization methods, Cutting planes, Decompositions, Hybrid algorithms such as B&C, B&P, C&B, ...)

F3. " Graph theory ", including the following topics:

- Network optimization (e.g. Modeling problems as network flows, developing new algorithms for capacitated networks, ...)
- Modeling facility location/ sequencing/ scheduling/ line balancing/ distribution/ assignment/ allocation/ production planning/ ... as problems in graph theory such as

shortest path/ Hamiltonian path/ Hamiltonian cycle/ Eulerian circuit/ network flows/
graph coloring/ ...

- application of graphs as data structure

G. Honors and awards

1. “Georg Forster research fellowship” from “Alexander von Humboldt foundation” (April/2016 to July/2018)
2. Top researcher among all PhD students in the field of industrial engineering (2013)
3. Top student among all graduated MS students in the field of industrial engineering (2009)
4. Top researcher among all MS students in the field of industrial engineering (2009)
5. Member of “National foundation of elites of Iran” (2008 till now)
6. Top student among all graduated BS students in the field of industrial engineering (2007)
7. Member of “Young researchers and elites club” (2006 till now)

H. References (in alphabetical order)

- **Prof. Wolfgang Brüggemann**
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University of Hamburg,
Hamburg, Germany*
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*Professor at the Department of Industrial Engineering,
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- **Dr. Ioannis Konstantaras**
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M. Karimi-Nasab

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