

ALI HUSSEINZADEH KASHAN

(*Scientific Curriculum Vitae*)

BACKGROUND

- Post Doctoral Fellowship at Amirkabir University of Technology (with financial support of Iran National Elite Foundation, Shahid Chamran award) Tehran, Iran (from December 2010 to December 2011). Research work: “*A new method for solving multiple objective engineering optimization problems.*”
- Ph.D, Industrial Engineering, Amirkabir University of Technology, Tehran, Iran, 2005-2009. Dissertation title: “*Upper and lower bounds for batch-processing machine scheduling problems with different capacity requirement for jobs.*” Grade: 20/20 (grade A).

TEACHING EXPERIENCES

- Heuristic and meta heuristic methods
- Linear programming.
- Operations research (Integer programming, Dynamic programming, Nonlinear programming, Multi-criteria decision making).
- Probability theory and engineering statistics.
- Inventory planning and control.
- Production planning and control.

Short courses

- Performance appraisal
- Operations strategy
- New trends in human resource management
- Research methods for managers

RESEARCH INTERESTS

- Revenue management.
- Evolutionary/Swarm/Nature inspired computations and theory.
- Applied optimization with emphasis on engineering design.
- Single as well as multiple objective combinatorial optimization with focus on:
 - ✓ Grouping problems (e.g. university course/exam timetabling, bin packing, graph coloring, pickup and delivery, cell formation, etc).
 - ✓ Operations sequencing and scheduling.
 - ✓ Various location problems.
 - ✓ Design of single/closed loop supply chains.
- Mathematical modeling, Heuristic/exact optimization, and Approximation algorithms.

- Simulation based optimization.
- Manufacturing policies and operations strategy.

PUBLICATIONS

Refereed Journal papers

1. **Husseinzadeh Kashan A**, Karimi B (2012). New Lower Bounds for the Optimal Makespan on a Single Batch Processing Machine. *Amirkabir Journal: Mechanical Engineering*, 43 (2), 76-84 (in Persian).
2. **Husseinzadeh Kashan A** (2011). An Efficient Algorithm for Constrained Global Optimization and Application to Mechanical Engineering Design: League Championship Algorithm (LCA). *Computer-Aided Design*, 43, 1769-1792.
3. Husseinzadeh Kashan M, Nahavandi N, **Husseinzadeh Kashan A**. DisABC: A New Artificial Bee Colony Algorithm for Binary Optimization. *Applied Soft Computing*, 12, 342–352.
4. Noktehdan A, Karimi B, **Husseinzadeh Kashan A** (2010). A differential evolution algorithm for the manufacturing cell formation problem using group based operators. *Expert System with Applications*, 37, 4822-4829.
5. Zarei M, Mansour S, **Husseinzadeh Kashan A**, Behrooz Karimi (2010). Designing a reverse logistics network for end-of-Life vehicles recovery. *Mathematical Problems in Engineering*, Volume 2010, Article ID 649028, doi:10.1155/2010/649028.
6. **Husseinzadeh Kashan A**, Karimi B, Jolai F (2010). An effective hybrid multi-objective genetic algorithm for bi-criteria scheduling on a single batch processing machine with non-identical job sizes. *Engineering Applications of Artificial Intelligence*, 23, 911-922.
7. Rafiee Parsa N, Karimi B, **Husseinzadeh Kashan A** (2010). A branch and price algorithm to minimize makespan on a single batch processing machine with non-identical job sizes. *Computers & Operations Research*, 37:1720-1730.
8. Naimi Sadigh A, Mozafari M, **Husseinzadeh Kashan A** (2010). A mixed integer linear program and tabu search approach for the complementary edge covering problem. *Advances in Engineering Software*, 41:762–768.
9. **Husseinzadeh Kashan A**, Karimi B, Fatemi Ghomi S.M.T (2009). A note on: Minimizing makespan on a single batch processing machine with non-identical job sizes. *Theoretical Computer Science*, 410:2754-2758.
10. **Husseinzadeh Kashan A**, Karimi B (2009). A discrete particle swarm optimization algorithm for scheduling parallel machines. *Computers & Industrial Engineering*, 56:216-223.
11. **Husseinzadeh Kashan A**, Karimi B (2009). An improved mixed integer linear formulation and several lower bounds for minimizing makespan on a flowshop with batch processing machines. *International Journal of Advanced manufacturing Technology*, 40:582-594.
12. **Husseinzadeh Kashan A**, Karimi B, Jenabi M (2008). A hybrid genetic heuristic for scheduling parallel batching machines with arbitrary job sizes. *Computers & Operations Research*, 35:1084-1098.

13. **Husseinzadeh Kashan A**, Karimi B (2008). Scheduling a single batch-processing machine with arbitrary job sizes and incompatible job families: an ant colony framework. *Journal of the Operational Research Society*, 59:1269-1280.
14. **Husseinzadeh Kashan A**, Karimi B, Jolai F (2006). Effective hybrid genetic algorithm for minimizing makespan on a single-batch-processing machine with non-identical job sizes. *International Journal of Production Research*, 44:2337-2360.
15. Fazel Zarandi MH, Turksen IB, **Husseinzadeh Kashan A** (2006). Fuzzy control charts for variable and attribute quality characteristics. *Iranian Journal of Fuzzy Systems*, 3:31-44.

Referred Conference papers

1. S. H Yakhchali, **Husseinzadeh Kashan A** (2011). On possible and necessary optimality of schedules in the single machine scheduling problem with imprecise processing times and due dates. WCE2011, World Congress on Engineering, 1-5.
2. **Husseinzadeh Kashan A**, **Karimi B** (2010). A new algorithm for constrained optimization inspired by the sport league championships. *WCCI 2010 IEEE World Congress on Computational Intelligence*, 487-494.
3. Husseinzadeh Kashan M, **Husseinzadeh Kashan A**, Nahavandi N (2010). A novel differential evolution algorithm for binary optimization problems. *OR2010 3rd Conference of Iranian Operations Research Society*, Amirkabir University of Technology, Iran.
4. **Husseinzadeh Kashan A** (2009). League Championship Algorithm: a new algorithm for numerical function optimization. *SoCPaR 2009 IEEE International Conference of Soft Computing and Pattern Recognition*, 43-48.
5. **Husseinzadeh Kashan A**, Jenabi M, Husseinzadeh Kashan M (2009). A new solution approach for grouping problems based on evolution strategies. *SoCPaR 2009 IEEE International Conference of Soft Computing and Pattern Recognition*, 88-93.
6. **Husseinzadeh Kashan A**, Karimi B, Jolai F (2006). Bi-criteria scheduling on a single batch processing machine with non-identical job sizes. *INCOM'2006 12th FAC Symposium on Information Control Problems in Manufacturing*, 727-732.
7. **Husseinzadeh Kashan A**, Karimi B, Jolai F (2006). Minimizing makespan on a single batch processing machine with non-identical job sizes: a hybrid genetic approach. *EvoCOP 2006 Evolutionary Computation in Combinatorial Optimization: 6th European Conference*, Springer-Verlag, Lecture Notes in Computer Science, 135-146.
8. **Husseinzadeh Kashan A**, Jenabi M, Torabi S A, Faraji E, Ghazanfari P (2008). A simulation based optimization approach for availability analysis of Peugeot 206 body assembly line equipments. 5th international conference on Maintenance, Tehran, Iran (in Persian).

Papers under processing

1. **Husseinzadeh Kashan A**, Husseinzadeh Kashan M. A particle swarm optimizer for grouping problems. *Information Sciences* (current status: Accepted with minor revision).
2. **Husseinzadeh Kashan A**. League Championship Algorithm (LCA): A new algorithm for global optimization inspired by sport championships. *Journal of Global Optimization* (current status: Revised).
3. **Husseinzadeh Kashan A**, Karimi B, Noktehdan A. A discrete particle swarm optimization algorithm for the manufacturing cell formation problem. *International Journal of Advanced Manufacturing Technology* (current status: Accepted with minor revision).
4. Husseinzadeh Kashan M, **Husseinzadeh Kashan A**, Nahavandi N. A novel differential evolution algorithm for binary optimization. *Computational Optimization and Applications* (current status: Revised).
5. **Husseinzadeh Kashan A**, Rezaee B. An efficient approach for unsupervised fuzzy clustering based on grouping evolution strategy. *Pattern Recognition* (current status: Revised).
6. **Husseinzadeh Kashan A**. Grouping evolution strategies: a new efficient solution approach for grouping problems. *Applied Mathematical Modeling* (current status: Under review).

BOOKS

Published books

1. Slack N, Lewis M (2002). Operations Strategy. Prentice-Hall. (Translated into Persian by: Moattar Hosseini S.M, **Husseinzadeh Kashan A**, Amirkabir University Press, 2009).
* This book was deserved to appreciate, in 12th Book of the Season Award, together with 38 books amongst 5887 books published during the season.

Books in preparation

1. Karimi B, **Husseinzadeh Kashan A**, Jenabi M. Heuristic and metaheuristic search methods (in Persian).

RESEARCH PROJECTS

1. **Husseinzadeh Kashan A**. A new method for solving multiple objective engineering optimization problems. Financially supported by Iran National Elite Foundation, 2010-2011.
2. **Husseinzadeh Kashan A**, Akbari AA. An efficient method for the assignment type optimization problems and applications to the bin packing problem. Financially supported by Islamic Azad University, South branch of Tehran, 2011-present.
3. **Husseinzadeh Kashan A**, Sajadi S M. A new algorithm for job scheduling in a permutation flowshop system inspired by the sport league championships. To be financially supported by Islamic Azad University, Najaf Abad branch, 2012.

4. Karimi B, **Husseinzadeh Kashan A**, Rafiee Parsa N. Mathematical models and solution methods for operations scheduling in semiconductor manufacturing. Financially supported by Iran National Science Foundation, 2010.
5. **Husseinzadeh Kashan A**, A new method for data clustering with dynamic adjustment of the number of clusters: applications to knowledge management. Supported by Iran National Elite Foundation, Maleke Ashtar University of Technology.

THESIS SUPERVISED/ CO-SUPERVISED (M.Sc.)

1. Tavasoli Hale. A new method for reliability optimization based on league championship algorithm. Islamic Azad University, Najaf Abad Unit, 2012 (under supervision).
2. Sadri M. A new metaheuristic method for preventive maintenance based on reliability considerations and its application to oxygen unit in Mobarakeh Isfahan steel complex. Islamic Azad University, Najaf Abad Unit, 2012 (under supervision).
3. Keshmiri M. An efficient method for job scheduling on parallel machines in single and multi-objective environments. Islamic Azad University, Science and Research branch of Tehran, 2012 (under supervision).
4. Farzam Rad M. A multi-objective multi-product multi-period production planning model using simulation tools. Islamic Azad University, Najaf Abad Unit, 2012 (under co-supervision).
5. Rahmani Shadi. Developing a multi objective algorithm for truck scheduling in cross docking systems. Islamic Azad University, South branch of Tehran, 2012 (under co-supervision).
6. Rahmani Shabnam. A mathematical model for vehicle routing and scheduling in a cross docking system. Islamic Azad University, South branch of Tehran, 2012 (under co-supervision).
7. Nokteh Dan A. New evolutionary algorithms for grouping problems: applications on the cell formation problem. Amirkabir University of Technology, 2009 (Co-supervised).
8. Rafiee N. A branch and price algorithm for scheduling a single batch processing machine. Amirkabir University of Technology, 2009 (Co-supervised).
9. Mohammadi Z. Mathematical models and solution approaches for batch scheduling in supply chains. Amirkabir University of Technology, 2009 (Co-supervised).

REVIEW SERVICES FOR INTERNATIONAL JOURNALS

- IEEE Transactions on Evolutionary Computations
- Omega, the International Journal of Management Science
- Computers & Operations Research
- Journal of the Operational Research Society
- Computers & Industrial Engineering
- International Journal of Production Research

HONORS, AWARDS AND SPECIAL RECOGNITIONS

- ✓ *Recipient*, Iran National Elite Foundation prize; Shahid Chamran postdoctoral scientific prize 2010.

- ✓ *Recipient*, Iran National Elite Foundation prize; honorary travel to Mecca for Hajj pilgrimage, 2011.
- ✓ *Recipient*, Iran National Elite Foundation scientific prize, 2009.
- ✓ *Nominee*, 12th Kharazmi young researcher prize for a research project entitled “League Championship Algorithm (LCA): A novel Algorithm for Global Engineering Optimization Inspired by Sport Championships”, 2010.
- ✓ *Deserve to appreciate*, 12th Book of the Season Award for: Slack N, Lewis M (2002). Operations Strategy. Prentice-Hall. (Translated into Persian by Moattar Hosseini S.M, **Husseinzadeh Kashan A**, Amirkabir University Press, 2009). The book was deserved to appreciate together with 38 books amongst 5887 books published during the season.
- ✓ Member of the 24th Kharazmi International prize committee, Industrial Engineering and Technology Management technical committee.
- ✓ Elite researcher, department of Industrial Engineering, Amirkabir University of technology, 2007.
- ✓ Outstanding Ph.D student, Amirkabir University of technology, 2005-2009.
- ✓ Ranked 2nd in Industrial Engineering Ph.D entrance examination, Amirkabir University of technology, 2005.
- ✓ Outstanding M.Sc student, Amirkabir University of technology, 2003-2005.