Curriculum Vitae

Somaye Ghandi, Ph.D

Assistant Professor of Industrial Engineering, Faculty of Engineering,
University of Kashan, Kashan, Ravand Blvd, Iran.

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Fields of Specialization and Research Interests

- Artificial Intelligence and Expert Systems
- Robotics and Robot Motion Planning
- Industrial Automation, Computer Aided Design and Manufacturing
- Principles of simulation and its applications
- Combinatorial Optimization and Meta-heuristics
- Operations Sequencing and Scheduling
- Operations Research

Education

Tarbiat Modares University (TMU) **Sep. 2011 – Sep. 2015**

Ph.D. in Industrial Engineering
Dissertation title: Assembly Planning of Rigid and Flexible Parts.
Overall GPA: 3.84 / 4 (Top student of the Industrial Engineering Department, class of 2015)

University of Tehran (UT) **Sep. 2005 – Oct. 2007**

M.S. in Industrial Engineering
Thesis title: Solving the Parallel Machine Weighted Earliness and Tardiness Problem with a Multi-objective Scatter Search algorithm.
Overall GPA: 3.66 / 4

Isfahan University of Technology (IUT) **Sep. 2001 – Sep. 2005**

B.Sc. in Industrial Engineering (minor: Industrial Technology)
Senior Project title: Design and simulation of the construction of Cake and Cookie Company.
Overall GPA: 3.32 / 4 (Ranked 3st among the Ph.D. graduates of the Industrial Engineering Department, class of 2005)

Achievements and Honors

- Ranked 1st among the Ph.D. graduates of the Industrial Engineering Department, Tarbiat Modares University, 2015.
- Ranked 3st among the all applicants at the Iranian Ph.D. University Entrance Exam (Concourse), September 2011.
- Member of exceptional talents at Isfahan University of Technology in undergraduate degree
- Admission at the master's degree in Isfahan University of Technology in Industrial Engineering Through the quota of outstanding students
- Evaluation of the PhD dissertation with a high degree (score 19.7 / 20)
- Evaluation of the Master's Thesis with a high degree (score 19.5 / 20)

Journal Papers

1. Khaksari, P. and **Ghandi, S.**, 2024. Mathematical Modeling and Solving the no-Wait Flow Shop Scheduling Problem Considering the Release Times and Preventive Maintenance Activities. *Journal of Industrial Engineering Research in Production Systems,* 11(23), 39-55.

2. Mohaymeni, F. and **Ghandi, S.**, 2023. Concurrent scheduling and lot sizing in a flexible flow shop environment considering intermediate and public buffers. *Modern Researches in Decision Making*, 8(4), 114-144.

3. **Ghandi, S.** and Masehian, E., 2023. Fitness landscape analysis of the simple assembly line balancing problem type 1. *International Journal of Industrial Engineering Computations,* 14(4), 589-608.

4. **Ghandi, S.** and Bonroodi, R., 2023. Mathematical modeling and solving the Flexible Flow Shop scheduling problem with reverse flows and the limitation of access to machines. *Journal of Industrial Engineering Research in Production Systems,* 10(21), 1-17.

5. **Ghandi, S.** and Mokhtari, H., 2022. Comparison of Various Machine Learning Methods for Automatic Control and Guidance of Mobile Robot. *Journal of AI and Data Mining,* 2022 Jul 1; 10(3):385-400.

6. **Ghandi, S.** and Ghazavi, N., 2021. Landscape Analysis and a Hybrid Iterated Local Search (HILS) for Solving the Simple Assembly Line Balancing Problem type 2 (SALBP2). *Journal of Quality Engineering and Production Optimization*.

7. **Ghandi Bidgoli, S.** and Amini, M., 2021. Multi Agent Flow Shop Scheduling Model with Deteriorating Jobs and Sequence-Dependent Setup Times Using Multi Objective Particle Swarm Optimization (MOPSO) Algorithm. *Journal of Industrial Engineering Research in Production Systems, 9*(18).

8. Masehian, E. and **Ghandi, S.**, 2021. Assembly sequence and path planning for monotone and nonmonotone assemblies with rigid and flexible parts. *Robotics and Computer-Integrated Manufacturing*, *72*, p.102180.

9. Saeedi, S., Khorsand, R., **Bidgoli, S.G.** and Ramezanpour, M., 2020. Improved many-objective particle swarm optimization algorithm for scientific workflow scheduling in cloud computing. *Computers & Industrial Engineering*, *147*, p.106649.

10. **Ghandi Bidgoli, S.** and Karimi, F., 2020. A Simulation-Based Optimization Approach For Mixed model Two-sided Assembly Line Balancing with stochastic task times (Case Study: Beh Afarinan Datis Tiva Company). *Journal of Industrial Engineering Research in Production Systems*, *8*(16), pp.199-213.

11. Masehian, E. and **Ghandi, S.**, 2020. ASPPR: A new Assembly Sequence and Path Planner/Replanner for monotone and nonmonotone assembly planning. *Computer-Aided Design*, *123*, p.102828.

12. **Ghandi S.** and Masehian E., "A Breakout Local Search (BLS) Method for Solving the Assembly Sequence Planning Problem", *Engineering Applications of Artificial Intelligence (EAAI)*, Vol. 39, 2015, pp. 245–266, DOI: 10.1016/j.engappai.2014.12.009.

13. **Ghandi, S.**, and Masehian, E., "Review and Taxonomies of Assembly and Disassembly Path Planning Problems and Approaches", *Computer Aided Design (CAD)*, Vols. 67–68, October 2015, pp. 58–86. DOI: 10.1016/j.cad.2015.05.001.

14. **Ghandi, S.**, and Masehian, E., "Assembly Sequence Planning of Rigid and Flexible Parts", *Journal of Manufacturing Systems*, Vol. 36, July 2015, pp. 128–146. DOI: 10.1016/j.jmsy.2015.05.002

15. Tavakkoli-Moghaddam R., Jolai F. and **Ghandi S.**, Solving the Parallel Machine Weighted Earliness and Tardiness Problem with a Multi-objective Scatter Search algorithm (in Persian). *The Technical Department of the University of Tehran Journal*, Vol. 42 (7), February 2009, pp. 923-934.

Conference Papers

1. Ghafari O. and **Ghandi S.**, "Mathematical modeling and solving of flexible open shop scheduling problem considering reverse flows, sequence-dependent setup times and task release times", *19th Iranian International Industrial Engineering Conference*, 2024.

2. Jebelli H. and **Ghandi S.**, "Designing a business intelligence dashboard to analyze the performance of Kosar Forghani store", *19th Iranian International Industrial Engineering Conference*, 2024.

3. Ajalluian F. and **Ghandi S.**, "Determining the optimal stock portfolio using the knapsack model considering risk and stock classification", *9th International Conference on Industrial and Systems Engineering*, 2023.

4. Heydar Zaman Abadi F. and **Ghandi S.**, " Solving The Single Machine Scheduling Problem with Sequence-dependent Setup Time, Precedence Delays and the Limitation of Access to Machines", *9th International Conference on Industrial and Systems Engineering*, 2023.

5. Abdali M. H. and **Ghandi S.**, " Investigating the effect of packaging factors of beverage products on the choice of consumers and the amount of sales (case study: Tehran and Isfahan cities)", *8th International Conference on Logistics and Supply Chain*, 2023.

6. **Ghandi S.** and Damyar F., "Solving the problem of multi-period and multi-product hybrid manufacturing/remanufacturing planning with demand substitution", *18th Iranian International Industrial Engineering Conference*, 2021.

7. **Ghandi S.** and Naghdi M., "Solving the problem of cellular manufacturing planning with consideration of the amount of energy consumption using the Particle Swarm Optimization (PSO) algorithm ", *17th Iranian International Industrial Engineering Conference*, 2021.

8. **Ghandi S.** and Karimi F., " Mixed model Two-sided Assembly Line Balancing in case of stochastic task times using Simulation-Based Optimization (Case Study: Beh Afarinan Datis Tiva Company) ", *16th Iranian International Industrial Engineering Conference*, 2020.

9. **Ghandi S.** and Haghshenas M., " Simulation analysis of service desks of the Health Insurance organization- Case study: Isfahan province ", *16th Iranian International Industrial Engineering Conference*, 2020.

10. Mahdieh M., **Ghandi S.** and Ojaghloo M., "A memetic algorithm for the resource-constrained project scheduling problem", *in Proceedings of the 5th International Project Management Conference*, August. 2009, Tehran, Iran.

11. Ojaghloo M. and **Ghandi S.**, "A memetic algorithm for the resource-constrained project scheduling problem" (in Persian), *in Proceedings of the 5th International Project Management Conference*, August. 2009, Tehran, Iran.

Employment

University of Kashan, Kashan. **Sep. 2016 – Present**

Invited lecture, Department of industrial engineering. **Sep. 2016 – May 2018**

Assistant Professor of Industrial Engineering, Faculty of Engineering, **May 2018 – Present**

Electric goods company, Natanz. **Feb. 2008 – Jun. 2010**

Planning and project control Undertaking, Planning Deputy

Academic and software Skills

- Mathematical modeling of various real-world problems and solving them through systematic and algorithmic approaches.
- Computer programming of complex algorithms for problem solving and analysis.

- Analyzing, interpreting, and reporting data and information.
- Assigning, organizing and managing working teams.
- Written and oral academic and technical presentation skills.
- Designing and developing academic curricula, syllabi, and course plans.
- Teaching engineering and mathematical concepts to undergraduate and graduate students.
- Conducting academic research in the fields of industrial, manufacturing, and robotics engineering.
- Supervising, advising, guiding, and motivating students in their research projects and theses.
- Technical reviewing of journal and conference papers, books, proposals, theses, reports, presentations, etc.
- Programming language C and Matlab (Expert)
- Optimization software's Gams and lingo
- Rigid and flexible parts simulator software such as: Abaqus- SolidWorks- CATIA
- Languages for the simulation of discrete-event systems such as: GPSS- GASP- Arena
- Moving robot simulator software Webots
- Project Management Software's such as: MSProject- P3E Primavera

Teaching

At University of Kashan

- Statistical quality control: From Fall 2016
- Principles of Management and the Organization theory: From Fall 2016
- Production planning: From Fall 2017
- Principles of simulation: From Fall 2017
- Manufacturing Methods: From Fall 2017
- Work and Time Study: From Fall 2017
- industrial automation: From Fall 2017
- Quality Management and Productivity: From Fall 2017
- Engineering Economics: From Spring 2017
- Operation Management: From Fall 2018
- Advanced Operation Management: From Spring 2019
- Operations Sequencing Theory: From Fall 2023

At Payame-Noor Universityy, Kashan branch (Invited lecturer)

- Engineering statistics: Spring 2009
- Probability theory and its application: Spring 2009

At Payame-Noor Universityy, Aran & Bidgol branch (Invited lecturer)

- Engineering statistics: Spring 2009
- System analysis: Spring 2011