In the Name of God

Curriculum Vitae

Dr. Yaghoub Alipouri

Current Position: Assistant Professor, Civil Engineering Department, KN Toosi University of Technology
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PERSONAL	**Date of Birth**: March 16, 1987 **Place of Birth**: Tabriz, Iran **Citizenship**: Iranian

EMPLOYMENT	**Assistant Professor, Construction Engineering and Management Department, Faculty of Civil Engineering, KN Toosi University of Technology** *February 20, 2020 -Present* **R&D and PMO member Sazman Tosee Maskan Iran Co, Tehran, Iran (part time job)** *May 1, 2014 -2019*

EDUCATION	**6 months sabbatical visit,** **Department of Construction Engineering and Management,** **Faculty of Engineering, National University of Singapore (Rank 12 by QS university ranking in 2015)** *Attendance from 14th Sep 2015 to 12th Mar 2016* **Ph.D. in Construction Engineering and Management, Department of Civil Engineering, Amirkabir University of Technology (Tehran Poly-technique), Tehran, Iran** *Attendance from 2012 to 2018* Thesis title: Uncertainty Modeling of Construction Projects' Scheduling Under Resource-Constraints Thesis Abstract:

A well-known problem in the area of scheduling, namely resource constrained project scheduling problem, is formulated under the conditions of mixed uncertainty comprising fuzziness and randomness (FS-RCPSP). Like the original RCPSP, the objective is to minimize the expected makespan of the project subject to precedence and resource constraints. Recognizing both fuzziness and randomness in activity durations results in more robust schedules, but the scheduling problem is harder to solve.

A resource flow network based mathematical model with fuzzy random variables is presented to solve FS-RCPSP. Then, this model is transformed into a mixed-integer linear programming model with crisp variables. The CPLEX 12.6.0.1 solver in AIMMS (2014) is employed for applying the proposed model to solve 960 benchmark instances generated from the well-known sets J30 and J60 in PSPLIB. The results showed that the CPLEX solver in AIMMS could not find any integer solution for about 10% of the J30 problems and 31% of the J60 problems. Therefore, in this thesis, a resource flow based branch-and-bound procedure is also designed to solve the FS-RCPSP. The depth-first strategy is utilized for constructing the search tree and earliest start time (EST) concept is adopted for selecting a node for further branching while traversing the tree down to the leaves. The results of applying the proposed branch-and-bound on the set of 960 problems show experimentally its effectiveness to solve the FS-RCPSP, however its computational effort is high. A self-adaptive differential evolution based hyper-heuristic, named SADESP, is proposed to address this issue. The performance of SADESP is benchmarked against CPLEX across the extensive set of 960 problems created with ProGen. The results returned by SADESP for FS-RCPSP are very encouraging, both in terms of accuracy and computational performance.

M.Sc. in Construction Engineering and Management, Department of Civil Engineering, Amirkabir University of Technology (Tehran Poly-technique), Tehran, Iran

Attendance from 2009 to 2011

Thesis title:

A fuzzy optimization method for planning project's with resource-constrained

Thesis Abstract:

One of the problems in projects management is planning of project's with resource-constrained. In this research, we deal with resource-constrained project scheduling problem (RCPSP). There are different methods, such as exact, heuristic and meta-heuristic methods, to solve project scheduling problems.

In this research, we propose an evolutionary programming (EP) based meta-heuristic to solve the RCPSP with deterministic activity times. Mostly, project activity durations are not always deterministic and they have uncertainities. So, we have also considered uncertain activity durations that include variable and fuzzy activity durations.

Long and Ohasto [80] have proposed a hybrid genetic algorithm to solve the RCPSP with variable activity times. In this research, we have improved this

hybrid genetic algorithm.

Moreover, an evolutionary programming based meta-heuristic has been proposed to optimize the RCPSP with fuzzy activity times.

Simulation results validate the effectiveness of the proposed algorithms. The proposed methods will simplify the procedure of scheduling of the projects with precedence and resource constraints.

B.Sc. in Structural Engineering, Department of Civil Engineering, University of Tabriz, Tabriz Iran
Attendance from 2005 to 2009

RESEARCH INTERESTS	• Project Planning, scheduling and control • Fuzzy, stochastic, fuzzy-stochastic, and fuzzy type-2 theories • Internet of things and its application • Optimization • Operational Research • Construction safety management • Mathematical modeling • Project management • Building energy saving • Artificial Intelligence • Strategic management

PUBLICATIONS

Published Journal Papers:

1. **Ya. Alipouri**, M.H. Sebt, A. Ardeshir, M.H. Fazel Zarandi, "A Mixed-Integer Linear Programming Model for Solving Fuzzy Stochastic Resource Constrained Project Scheduling Problem", Operational Research: An International Journal, (2017), ISI.

2. M.R. Afshar**, Ya. Alipouri**, M.H. Sebt, W.T. Chan, "A type-2 fuzzy set model for contractor prequalification", Automation in construction, (2017), 84: pp.356-366, ISI.

3. **Ya. Alipouri**, M.H. Sebt, A. Ardeshir, W.T. Chan, "Solving the FS-RCPSP with hyper-heuristics: a policy driven approach", Journal of the Operational Research Society, (2018), ISI.

4. M H Sebt, **Ya. Alipouri** and Yo Alipouri. "Solving resource-constrained project scheduling problem with evolutionary programming", Journal of the Operational Research Society, (2013), 64, pp. 1327-1335, ISI.

5. Yo Alipouri, J Poshtan, **Ya. Alipouri** and M R Alipour. "Momentum

Coefficient for Promoting Accuracy and Convergence Speed of Evolutionary Programming", Applied Soft Computing, Elsevier, 12 (2012), pp 1765–1786, ISI.

6. Yo Alipouri, J Poshtan and **Ya. Alipouri**. "A modification to Classical Evolutionary Programming by shifting strategy parameters", Applied Intelligence, (2013), 38(2), pp. 175-192, ISI.

7. M H Sebt; M H Fazel Zarandi; **Ya. Alipouri**. "Genetic Algorithms to Solve Resource-Constrained Project Scheduling Problem with Variable Activity Durations", International Journal of Civil Engineering, Transaction A: Civil Engineering, (September 2013), 11(3), pp. 189-198, ISI.

8. H. Mostafaei, **Ya. Alipouri**. "A mixed-integer linear programming for scheduling a multi-product pipeline with dual purpose terminals", Computational and Applied Mathematics, Springer, (2015), 34(3), pp.979-1007, ISI.

9. H. Mostafaei, **Ya. Alipouri**, M. Zadahmad. "A mathematical model for scheduling of real-world tree-structured multi-product pipeline system", Mathematical Methods of Operations Research, Springer, (2015), 81, pp. 53-81, ISI.

10. M H Sebt; M R Afshar; **Ya. Alipouri**. "Hybridization of genetic algorithm and fully informed particle swarm for solving the multi-mode resource-constrained project scheduling problem", Engineering Optimization, (2016), ISI, DOI: 10.1080/0305215X.2016.1197610.

11. M H Sebt; M R Afshar; **Ya. Alipouri**. "An efficient genetic algorithm for solving the multi-mode resource-constrained project scheduling problem based on random key based", International Journal of Supply and Operations Management, (November 2015), 2(3), pp. 905-924.

12. **Ya. Alipouri**, A. Ardeshir, M.H. Sebt, H. Vasheghani, "Identification of strategies for the improvement of human safety behavior in Iran by considering safety climate and personal experience". Journal of Iranian Society of Civil Engineering (Asas), (2011), pp. 50-59 [Persian].

13. **Ya. Alipouri**, A. Ardeshir, M.H. Sebt, M.H. Fazel Zarandi, "A Fuzzy Expert System and Genetic Algorithms to Score the Safety Management Performance in Construction Sites of Iran: Considering Safety Climate and Personal Experience", Sharif Journal of Science and Technology, (2015), 31-2(1) pp.31-39, [Persian].

14. M. H. Sebt, M. R. Afshar, **Ya. Alipouri**, "Solving a multi-mode resource-constrained project scheduling problem using genetic algorithm", Sharif Journal of Science and Technology, (2015), 32-2(1), pp. 101-112, [Persian].

15. M. H. Sebt, M. R. Afshar, **Ya. Alipouri**, "An efficient meta-heuristic algorithm for project scheduling with multiple modes", Journal of Civil Engineering (Ferdowsi Mashhad), (2015), 27(1), [Persian].

16. A. Ardeshir, **Ya. Alipouri**, P. Besmel, "Investigation of Factors Influencing Safety Performance of Workers in Construction Sites Using Fuzzy Analytic Hierarchy Process (Case Study: Khuzestan province), Iran occupational health journal (IOH), Feb-Mar 2015, 11(6), pp. 64-74 [Persian].

17. A. Ardeshir, A.H. Khalilianpoor, Q. Bagheri, **Ya. Alipouri**, "Identify the most important parameters affecting the safety performance of mega projects in Iran's construction industry (Using Fuzzy Analytic Hierarchy Process), Iran occupational health journal (IOH), 2016, 13(2), pp. 17-28, [Persian].

Published Conferences:

18. **Ya Alipouri**, M.H. Fazel Zarandi, M.H. Sebt, A. Ardeshir, "An artificial system to score safety management performance in construction sites of Iran", 9th International Project Management Conference, 2012, Tehran, Iran, [Persian].

19. A. Ardeshir, P. Besmel, **Ya Alipouri**, "A Survey of Factors Influencing Safety Performance in Construction Site (Case study: khuzestan Province), National Conference on Architecture, Civil Engineering &Urban Modern Development, 2014, Tabriz, Iran.

20. A. Ardeshir, S. Nikkhah, **Ya Alipouri**, "The Owners Role in Iran Construction Safety", National Conference on New Achievements and Applied Civil Engineering, 2013, Karaj, Iran, [Persian].

21. A. Ardeshir, A. Adli, **Ya Alipouri**, "Safety Assessment of Soil Nailing System in Stabilization of Deep Excavations", 1st National Congress on Construction Engineering and Projects Assessment, 2013, Gorgan, Iran, [Persian].

22. A. Ardeshir, Z. Zare, **Ya Alipouri**, "Evaluating Safety and Health Training Importance in Civil Engineering Courses", 1st National Congress on Construction Engineering and Projects Assessment, 2013, Gorgan, Iran, [Persian].

Books

23. A. Ardeshir, **Ya. Alipouri**, H. Ardeshir, "Network Scheduling and Control Techniques for Construction Projects", ACECR Publication, Amirkabir University of Technology Branch, Tehran, Iran, 2015 [persian].

ACADEMIC HONORS AND INVOLMENTS	- Graduated with distinction, Bachelor of Science, University of Tabriz, 2009. - Graduated with distinction, Master of Science, Amirkabir University of Technology (Iran Polytechnique), 2011. - Selected MSc thesis as the best project of Amirkabir University of Technology in 2012. - Paper Reviewer for:
	  - European journal of Operational Research
	  - Scientific Research and Essays.
	  - Safety Science
	  - IEE Transactions on Computational Intelligence and AI Games
	  - Journal of Experimental & Theoretical Artificial Intelligence - H-index=8, i10-index=8 (https://scholar.google.com/citations?user=tFUTKqAAAAAJ&hl=en) - Member of CSCE the Canadian Society for Civil Engineering - Member of Iranian Civil Engineers, Architects and Contractors. - Member of PMI-RMP Group

RESEARCH EXPERIENCE	- Scheduling of transporting of oil derivatives with pipelines, Oil Ministry, Tehran. Iran, 2010-2012. - Estimating time and cost claim of civil and infrastructure projects, Technology research center of Sharif University, Iran. 2012-2013. - How to assign energy labels to the buildings, Ministry of Energy, Iran, 2013-2015.

TEACHING EXPERIENCE	**Professor,** KN Toosi University of Technology, 2017-present
	  ■ Construction Machinery Management
	  ■ Project Planning and Control
	  ■ Seminar and Research Methods
	  ■ Project Financial Management and Accounting
	  ■ Construction Methods
	  ■ Construction Management Principles
	Invited Professor, Allaodole Semnani Institute of Higher Education (ASIHE), 2017-2018
	  ■ Construction Machinery Management
	  ■ Project Financial Management and Accounting
	  ■ Project Management Theories
	  ■ Project Management Methods 2
	  ■ Management Case Projects
	  ■ Road Construction Machineries
	  ■ Operational Research
	Invited Professor, Sharif University of Technlogy, 2017-2018
	  ■ Construction Operations Optimization
	  ■ Construction Machinery Management
	  ■ Project Estimation and Contracts
	Invited Professor, Ivanekey University, 2017
	  ■ Construction Machineries Management

Invited Professor, Alborz University, 2013.
- Construction Methods
- Contracts Principals and Laws

Teaching Assistant, Amirkabir University of Technlogy, 2012-2014
- Project Management
- Projects Planning and Control
- Construction Site and Safety Management
- Construction Machinery Management
- Project Strategic Management
- Strategic Management
- Risk Management

SKILLS	**Language** – Azari, Persian, English, Arabic
	Computer Skills
	   - Programming Languages: Matlab (m-file), Fortran, Clips, C, Delphi
	   - Application software: Microsoft Office, Matlab, MS Project, Primavera P6, Autocad, Etabs, Sap, Safe, SPSS, Expert Choice
	   - Operation Research software: AIMMS, GAMS, LINGO, LINDO