

# Amin Alvanchi

Associate Professor  
Department of Civil Engineering,  
Sharif University of Technology  
Tehran, Iran  
Tel : +98 21 6616 4221  
Fax: +98 21 6601 4828  
[alvanchi@sharif.edu](mailto:alvanchi@sharif.edu)  
[Sharif.edu/~alvanchi](http://Sharif.edu/~alvanchi)

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## EDUCATION

- Jan 2007-  
Sep 2011      **Ph.D.**, Hole School of Construction Engineering and Management, Department of Civil and Environmental Engineering, University of Alberta, Edmonton, Canada  
Supervisor: Dr. Simaan AbouRizk (Professor, Department of Civil and Environmental Engineering, University of Alberta; NSERC Industrial Chair in Construction Engineering and Management)  
Co-supervisor: Dr. SangHyun Lee (Assistant Professor, Department of Civil and Environmental Engineering, University of Michigan, Ann Arbor, USA)  
*Thesis research: Incorporating the Effects of Complex Dynamic Interactions in the Construction Decision Making Process*
- 1999 - 2002      **M.Sc.** in Industrial Engineering, Tarbiat Modares University, Tehran, Iran  
Supervisor: Dr. Amir Albadvi (Associate Professor, Department of Industrial Engineering, Tarbiat Modares University, Iran)  
*Thesis Research: An assessment of implementing Enterprise Resource Planning (ERP) Systems in manufacturing companies of Iran*
- 1995 - 1999      **B.Sc.** in Industrial Engineering/System Analysis, Sharif University of Technology, Tehran, Iran

## INDUSTRIAL EXPERIENCE

- Jul 2020 –  
Present      **Head of Project Control and Planning Research Team** Investment and Public Partnership, Tehran Municipality, Iran.
- Jun 2020 –  
Present      **Construction Manager** Jarrah Tehrani Innovation Center Project, Tehran, Iran.
- May 2020 –  
Present      **Head of Consultant Team** for BIM vision and strategic plan development for the Tehran Province, Tehran, Iran.
- Jan 2020 –  
Present      **Head of Consultant Team** for BIM-based feasibility study and conceptual design of Jarrah-Tehrani innovation center, Tehran, Iran.
- Oct 2019 –  
Jan 2020      **Head of Consultant Team** for Aluminum Downstream Products Prefeasibility Studies for Parsian Energy Intensive Industrial Special Economic Zone, Tehran, Iran.
- Jun 2019 –  
Present      **BIM Implementation Consultant** for Amidieh Hospital Project, Tehran, Iran.
- Jun 2019 –  
Present      **Project Management Office Developer** for Oghaf Projects in Tehran, Iran.

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- Jan 2019 – Present      **Project Control and Surveillance** for BIM implementation regulation and instruction development for public construction projects in Tehran, Iran.
- Jan 2019 – Aug 2019      **Head of Simulation Team** for improving design, functionality and layout of Kish Island Port Facilities, Kish Island, Hormozgan, Iran.
- Sep 2018 – Jun 2019      **Head of Project Team** for the development of contractual scheme and documents for the old urban areas, Tehran, Iran.
- Jun 2018 – Present      **Head of BIM Implementation Supervisory Team** in the Civil Engineering building expansion at the Sharif University of Technology, Tehran, Iran.
- Jun 2018 – Jun 2019      **Head of Simulation Team** for improving layout of the airport terminal building in Kish Island, Hormozgan, Iran.
- Mar 2018 – Aug 2018      **Head of BIM Implementation Supervisory Team** in the Iran Mall tower construction project, Tehran, Iran.
- Jan 2016 – Jan 2018      **Project Management and Control System Developer** for Urmia lake restoration projects, Tehran, Iran.
- Mar 2011 – Jan 2013      **Project Manager of Integrated Management System Project** at Waiward Steel Fabricators Ltd, Edmonton, Alberta, Canada. Planned, implemented and controlled continuous improvements in the construction projects. Designed and developed automated maintenance system and safety behavioral based observation (BBO) system using M.S. Access database. Led the Company's efforts on developing integrated management system.
- 2009      **Member of Train tunnel Construction Simulation Team** for Edmonton municipality, Edmonton, Canada.
- 2007      **Member of Pipeline Project Simulation Team** for North-American construction group, Edmonton, Canada.
- Mar 2011 – Jan 2013      **Project Manager of Integrated Management System Project** at Waiward Steel Fabricators Ltd, Edmonton, Alberta, Canada. Planned, implemented and controlled continuous improvements in the construction projects. Designed and developed automated maintenance system and safety behavioral based observation (BBO) system using M.S. Access database. Led the Company's efforts on developing integrated management system.
- 2004-2006      **Managing Director and Project Manager** at PouyaParto Engineering Co, Tehran, Iran. Some selected projects can be listed as:
- Optimization of Material and Product Storage Layout, Mazandaran Wood and Paper Industry
  - Project Planning and Control for the National Project of Intelligent Fuel Cards
  - Feasibility Study on Bulked Continuous Filament (BCF) Yarn Plant
  - Design of Shop Layout Expansion for Iran Tin Co
  - Mineral Oil Plant Pre-Feasibility Study
  - Multi-Layer Mosaic Plant Feasibility Study

- Prefabricated Wall Plant Feasibility Study
  - Granite and Marble Slab Plant Feasibility Study
  - Project Planning and Control for Mineral Water Plant
- 2002-2004      **Head of Engineering Group and Project Manager** at Petrochemical Down Stream Industries Development Co (PDSID), Tehran, Iran. Conducted different feasibility and pre-feasibility studies on petrochemical products including: Vinyl Acetate, Poly Ethylene Glycol, Glycerin, Polystyrene, Acetaldehyde, Formaldehyde
- 1999-2001      **System Analyst** at Nazmafarin Co, Tehran, Iran. Analyzed, designed, and supervised the development of the Integrated Maintenance and Repair system at Arak Petrochemical Complex
- Feb-Jul 1999    **Engineer** at Shetabkar Co, Tehran, Iran. Participated in the implementation of the Statistical Process Control project in an auto motor parts production line.

### ACADEMIC EXPERIENCE

- Jul 2020 - Present      **Associate Professor at the Department of Civil Engineering, Sharif University of Technology, Tehran, Iran**
- Courses: Contract administration, Project planning and control methods, Construction operation simulation, Computer applications in construction management, Project and construction management, System dynamics
  - Areas of research: Building information modeling, Contract Administration, Construction Operation Simulation, Project Management Systems, Sustainability in Construction
- Jan 2013 – Jul 2020      **Assistant Professor at the Department of Civil Engineering, Sharif University of Technology, Tehran, Iran**
- Jan 2012 – Jan 2013      **NCERC Industrial R&D Fellowship, Waiward Steel Fabricators Ltd., Edmonton, Canada**
- Worked on Integrated Safety and Quality Management System
  - Developed Behavior Based Safety Observation System
  - Developed an Automated Preventive Maintenance System
- Mar 2010      **Invited Lecturer for teaching a crash Construction Simulation Course, at the graduate level, Department of Civil Engineering, University of Calgary, Calgary, Canada**
- Jan 2007 – Mar 2011      **Teaching Assistant, Research Assistant and Research Projects Coordinator, Hole School of Construction Eng. and Mgmt., Dept. of Civil and Environmental Eng., University of Alberta, Edmonton, Canada**
- Taught Construction Contract Administration, Design and Analysis of Construction Operations Using Discrete Event Simulation, Construction Estimating, Planning and Control, and Statics
  - Involved in a variety of academic and industrial research projects
  - Supervised BSc students in civil engineering
- 2004-2006      **Lecturer in a series of workshops in Sharif University of Technology, University of Tehran, Science and Technology University and for several Industrial companies, Tehran, Iran**
- Lecture on “How to use ComfarIII software for industrial feasibility studies”
  - Lecture on “How to use MS Project for project control”

- 2002-2005      **University Lecturer Department of Industrial Engineering, Shomal University, Amol, Iran**
- Taught a range of undergraduate courses such as System Dynamics, Basis of Simulation, Project Control, Computer Information Systems, Inventory Control
  - Supervised 10 undergraduate level theses

## **PUBLICATIONS**

### **Journal Papers:**

- Alvanchi**, A., TohidiFar, A., Mousavi, M., Azad, R. & Rokooei, S. (2021) A critical study of the existing issues in manufacturing maintenance systems: Can BIM fill the gap?, *Computers in Industry*, Volume 131, 103484, ISSN 0166-3615, [DOI: 10.1016/j.compind.2021.103484](https://doi.org/10.1016/j.compind.2021.103484). [Download PDF \(free download before Jul 29, 2021\)](#).
- TohidiFar, A., Mousavi, M., & **Alvanchi**, A. (2021). A hybrid BIM and BN-based model to improve the resiliency of hospitals' utility systems in disasters. *International Journal of Disaster Risk Reduction*, 57, 102176, [DOI: 10.1016/j.ijdr.2021.102176](https://doi.org/10.1016/j.ijdr.2021.102176).
- Alvanchi**, A., & Hashemi, A. (2021). Exploring Worker's Absence Pattern in the Construction Industry in Iran. *Scientia Iranica*, 28(2), 586-597, [DOI: 10.24200/SCI.2020.51462.2192](https://doi.org/10.24200/SCI.2020.51462.2192). [Download PDF](#).
- Alvanchi**, A., BaniAssadi, F. Shahsavari, M. and Kashani, H. (2021) Improving materials logistics plan in road construction projects using discrete event simulation. *Engineering, Construction and Architectural Management*, [DOI: 10.1108/ECAM-08-2018-0317](https://doi.org/10.1108/ECAM-08-2018-0317). [Download PDF](#).
- Alvanchi**, A., Bajalan, Z. and Iravani, P. (2021) Emission assessment of alternative dam structure types, a novel approach to consider in new dam projects. *Construction Innovation*, Vol. 21 No. 2, pp. 203-217, [DOI: 10.1108/CI-08-2019-0074](https://doi.org/10.1108/CI-08-2019-0074). [Download PDF](#).
- Alizadeh Kharazi, B., **Alvanchi**, A. and Taghaddos, H. (2020) A Novel Building Information Modeling-based Method for Improving Cost and Energy Performance of the Building Envelope. *International Journal of Engineering*, 33(11), 2162-2173, [DOI: 10.5829/IJE.2020.33.11B.06](https://doi.org/10.5829/IJE.2020.33.11B.06). [Download PDF](#).
- Alvanchi**, A., Shiri, N. and Alikhani, H. (2020) In-depth Investigation of Project Planning and Control Software Package Application in the Construction Industry of Iran. *International Journal of Engineering*, 33(10), 1817-1825, [DOI: 10.5829/IJE.2020.33.10A.01](https://doi.org/10.5829/IJE.2020.33.10A.01). [Download PDF](#).
- Alvanchi**, A., Hoseini, S.M.T., Nili-Ahamdabadi M.H., AmiriDiba, A. (2020) Improving Public Private Partnership Project Procurement, Addressing Major Shortfalls in the Standard-Form Contract. *International Journal of Procurement Management*, 13(4), 482-506, [DOI: 10.1504/IJPM.2020.108627](https://doi.org/10.1504/IJPM.2020.108627).
- Alvanchi**, A., Rahimi, M., Mousavi, M. and Alikhani, H. (2020) Construction schedule, an influential factor on air pollution in urban infrastructure projects. *Journal of Cleaner Production*, Volume 255, 10 May 2020, 120222, [DOI: 10.1016/j.jclepro.2020.120222](https://doi.org/10.1016/j.jclepro.2020.120222).
- Alvanchi**, A., Moghaddam, N., and Hosseini, S. M. T. (2019) Assessment of factors influencing public parking development in Tehran. (In Farsi), *Journal of Transportation Research*, Accepted, Published online at: [http://www.trijournal.ir/article\\_92438.html](http://www.trijournal.ir/article_92438.html).

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- Alvanchi**, A., Rahimi, M. and Alikhani, H. (2019) Air Pollution Concentration Near Sensitive Urban Locations: A Missing Factor to Consider in the Grade Separation Projects. *Journal of Cleaner Production*, Volume 228, 10 August 2019, Pages 824-832, <https://doi.org/10.1016/j.jclepro.2019.04.300>.
- Alvanchi**, A., & Seyrfar, A. (2020). Improving facility management of public hospitals in Iran using building information modeling. *Scientia Iranica*, 27(6), 2817-2829, [DOI: 10.24200/sci.2019.50186.1562](https://doi.org/10.24200/sci.2019.50186.1562). [Download PDF](#).
- Alvanchi**, A. and JavadiAghdam S.(2019) Job Site Weather Index, an Indicator for Open Environment Construction Projects. *Journal of Construction Innovation*, Vol. 19 Issue: 1, pp.110-124, <https://doi.org/10.1108/CI-12-2017-0097>. [Download PDF](#).
- Mahpour A., **Alvanchi**, A. and Mortaheb M.M.(2019) "pplying Materials Waste Quantification to Cement Waste Reduction in Tehran's Residential Buildings: A Case Study. *Journal of Scientia Iranica*, Volume 26, Issue 5, Pages 2633-2653, [DOI: 10.24200/SCI.2017.4598](https://doi.org/10.24200/SCI.2017.4598).
- Alikhani, H., & **Alvanchi**, A. (2019). Using genetic algorithms for long-term planning of network of bridges. *Scientia Iranica*, 26(5), 2653-2664, [DOI: 10.24200/SCI.2017.4604](https://doi.org/10.24200/SCI.2017.4604). [Download PDF](#).
- Alvanchi**, A., HajiYakhchali, S. and Farmani, N. (2019) Evaluating factors causing delay in residential building projects of Mashhad (In Farsi). *Journal of Pajouheshi Sharif*, Volume 35.2, Issue 3.2, Pages 3-13, [DOI: 10.24200/J30.2018.2285.2163](https://doi.org/10.24200/J30.2018.2285.2163).
- Alvanchi**, A. and Moghaddam, N. (2019) Public Parking Space Issues for Tehran Citizens (In Farsi). *Journal of Pajouheshi Sharif*, Volume 35.2, Issue, 3.1, Pages 83-90, [DOI: 10.24200/J30.2019.20927](https://doi.org/10.24200/J30.2019.20927).
- Baniassadi, F., **Alvanchi**, A. and Mostafavi A. (2018) A Simulation-Based Framework for Concurrent Safety and Productivity Improvement in Construction Projects. *Journal of Engineering, Construction and Architectural Management*, Vol. 25 Issue: 11, pp.1501-1515, [DOI: 10.1108/ECAM-12-2017-0266](https://doi.org/10.1108/ECAM-12-2017-0266). [Download PDF](#).
- Alvanchi**, A. (2018) Analyzing dynamics of Iran's public construction projects delivered under design-bid-build method (In Farsi). *Journal of Pajouheshi Sharif*, Accepted, [DOI: 10.24200/j30.2018.2129.2100](https://doi.org/10.24200/j30.2018.2129.2100).
- Alvanchi** A., Lee S. and AbouRizk S. (2012) Dynamics of Workforce Skill Evolution in Construction Projects. *Canadian Journal of Civil Engineering*, Volume 39, Number 9, pp. 1005-1017, [DOI: 10.1139/2012-087](https://doi.org/10.1139/2012-087).
- Alvanchi** A., Azimi, R., Lee S. and AbouRizk S. (2012) Off-Site Construction Planning Using Discrete Event Simulation. *Journal of Architectural Engineering*, ASCE, Volume 18, Issue 2, pp. 114-122, [DOI: 10.1061/\(ASCE\)AE.1943-5568.0000055](https://doi.org/10.1061/(ASCE)AE.1943-5568.0000055).
- Alvanchi** A., Lee S. and AbouRizk S. (2012) Dynamics of Working Hours in Construction. *Journal of Construction Engineering and Management*, ASCE, Volume 137, No. 1, pp. 66-77, [DOI:10.1061/\(ASCE\)CO.1943-7862.0000384](https://doi.org/10.1061/(ASCE)CO.1943-7862.0000384).
- Alvanchi** A., Lee S. and AbouRizk S. (2011) Modeling Framework and Architecture of Hybrid System Dynamics and Discrete Event Simulation for Construction. *Computer-Aided Civil and Infrastructure Engineering Journal*, Volume 26, Issue 2, pp. 77-91, [DOI: 10.1111/j.1467-8667.2010.00650.x](https://doi.org/10.1111/j.1467-8667.2010.00650.x).
- Azimi, R., Lee, S., AbouRizk, S., **Alvanchi**, A. (2011) A Framework for an Automated and Integrated Project Monitoring and Control System for Steel Fabrication Projects. *Automation in Construction*, Volume 20, Issue 1, pp. 88-97, [DOI: 10.1016/j.autcon.2010.07.001](https://doi.org/10.1016/j.autcon.2010.07.001).

**Selected Conference Papers:**

- AminShokravi A., **Alvanchi** A. and Eskandar S. (2016) "Selecting effective parameters for parametric estimation models of building construction projects at predesign stage" (In Farsi) 1<sup>st</sup> National Conference on Applied Research in Structural Engineering and Construction Management, Sep 21 and 22, Tehran, Iran.
- Shafiee A., **Alvanchi** A. and Biglari S. "A Neural Network Based Model for Cost Estimation of Industrial Building at the Project's Definition Phase" 5th International/11th Construction Specialty Conference, Vancouver, Canada, June 8 to June 10, 2015
- Baniassadi F., **Alvanchi** A. and Mostafavi A. "A Simulation Framework for Ex-Ante Analysis of Safety and Productivity in Construction Projects" 5th International/11th Construction Specialty Conference, Vancouver, Canada, June 8 to June 10, 2015
- Alvanchi** A. and Bisadi M. "Life Cycle Sustainability Assessment of Dams in Iran" Presented and published in the conference proceeding at Second International Conference on Sustainable Urbanization, Hong Kong, China, Jan 2015, pp. 60-61.
- Shafiee A., **Alvanchi** A. and Biglari S. "Quantity Survey and Estimation of Civil Facilities in Small Industrial Projects (in Farsi)" Presented and published in the conference proceeding at 15th National Civil Students Conference, Oroomieh, Iran, Sep 2014.
- Taghaddos M., Heravi G. and **Alvanchi** A. "Improving Intra-city Mega Bridge Construction Projects Using Simulation Modeling (in Farsi)" Presented and published in the conference proceeding at 15th National Civil Students Conference, Oroomieh, Iran, Sep 2014.
- Alvanchi** A. and Kanerva J. "A Proposal for Integrated Safety and Quality Management System Framework for Construction Companies." Presented and published in the conference proceeding at the Annual Conference of Canadian Society for Civil Engineering, Edmonton, Alberta, Canada, Jun 2012.
- Alvanchi** A., Nguyen A. and AbouRizk S. "Structural Steel Fabrication Special Purpose Simulation." Presented and published in the conference proceeding at the Construction Research Congress, West Lafayette, IN, USA, May 2012, pp. 1391-1399.
- Alvanchi** A., Lee S. and AbouRizk S. "Modeling of Workforce Evolution in Construction Projects." Presented and published in the Conference Proceeding at the Annual Conference of Canadian Society for Civil Engineering, Ottawa, Canada, Jun 2011, **CN-003-1 to 11**.
- Alvanchi** A., Azimi R., Lee S. and AbouRizk S. "Virtual Model of Structural Steel Construction using COSYE Framework." Presented and published in the Conference Proceeding at the 10th International Conference on Construction Applications of Virtual Reality, Sendai, Miyagi, Japan, Nov 2010, pp. 283-290.
- Alvanchi** A., Lee S. and AbouRizk S. "Exploring the Effects of Context Level Factors on the Structural Steel Fabrication Shop Operation." Presented and published at the Construction Research Congress, Banff, Alberta, Canada, May 2010, pp. 298-307.
- Alvanchi** A., Lee S. and AbouRizk S. "Meaningful Level of Change in Hybrid Simulation for Construction Analysis". Presented and published at the Winter Simulation Conference, Austin, Texas, U.S.A, Dec 2009, pp. 2647-2652.

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- Azimi R., **Alvanchi A.**, Lee S. and AbouRizk S. "Development of the Industrial Steel Construction Federation in the COSYE Environment". Presented and published in the Conference Proceeding at 16th Annual Canadian Construction Research Forum, Banff, Alberta, Canada, Aug 2009, pp. 173-185.
- Alvanchi A.** "Incorporating the Mutual Effects of Context and Operation Level Effective Factors for Decision Making in Construction". Presented and published in the Conference Proceeding at 16th Annual Canadian Construction Research Forum, Banff, Alberta, Canada, Aug 2009, pp. 199-216.
- Alvanchi A.**, Lee S. and AbouRizk S. "Incorporating Context Level Parameters to Improve Operation Analysis in Steel Fabrication Shops". Presented and published in the Conference Proceeding at the International Conference on Construction Engineering and Management/Project Management, Jeju, Korea, May 2009, pp. 1053-1059.
- Alvanchi A.**, Lee S. and AbouRizk S. "Modeling Architecture for Hybrid System Dynamics and Discrete Event Simulation." Presented and Published in the Conference Proceeding at the Construction Research Congress, Seattle, U.S.A, Apr 2009, pp. 1290-1299.
- Azimi R. and **Alvanchi A.** "Intra-City Bus Planning Using Computer Simulation." Presented and Published in the Conference Proceeding at the International Conference on Prospects for Research in Transport and Logistics on a Regional – Global Perspective, Istanbul, Turkey, Feb 2009, pp. 211-216.
- Alvanchi A.** and AbouRizk S. "Applying Fuzzy Set Theory for the Project Risk Management Using Matlab Fuzzy Tool Box." Presented and Published in the Proceeding of Annual Conference of Canadian Society for Civil Engineering, Québec City, Canada, Jun 2008, v1, pp. 368-378.

### **SELECTED ACADEMIC HONORS**

Dec 2020	Recognized Industry Collaboration Lab for Year 2020, Sharif University of Technology
Dec 2020	Recognized Researcher of Year 2020, Sharif University of Technology
Jan 2012	NCERC Industrial R&D Fellowship Award
Jun 2010	Queen Elizabeth II Graduate Scholarship – Doctoral Level at the University of Alberta
Jan 2010	Top Three in Graduate Students Poster Competition, Department of Civil and Environmental Engineering
Dec 2009	Graduate Students' Association Professional Development Grants, GSA, University of Alberta
Apr 2009	Mary Louise Imrie, J Gordin Kaplan and Profiling Alberta's Graduate Student Travel Award
Sep 2008	Joseph D. Thompson/Zurich Canada Graduate Award in Construction Engineering and Management Research Graduate Student Competition
July 2008	AACE Scholarship Competition, Calgary Quarter
July 2008	AXA Pacific Insurance Company Graduate Travel Award