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## Behshad Lahijanian

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### EDUCATION

(Expected)

#### **Ph.D. Industrial and Systems Engineering**

Aug 2017- May 2022

University of Florida (UF), Gainesville, FL.

Dissertation Title: "Stochastic Programming Modeling and Analysis of Hospital Readmission Policies and Health Insurance Selection"

Committee: Michelle Alvarado (chair), Panos M. Pardalos, Xiang Zhong, Michael S. Gutter

#### **M.E. Industrial Engineering**

Sep 2015 - July 2017

Amirkabir University of Technology (Tehran Polytechnic), Iran

M.E. Title: "Scheduling Operating Room Scheduling under Fuzzy Uncertainty"

Advisor: Mohammad Hossein Fazel Zarandi

#### **B.S. Industrial Engineering**

Sep 2011 - July 2015

Amirkabir University of Technology (Tehran Polytechnic), Iran

B.S. Title: "Double Coverage Ambulance Location Modeling under Fuzzy Uncertainty"

Advisor: Mohammad Hossein Fazel Zarandi

### RESEARCH INTERESTS

1. **Decision-making by developing methods and algorithms for healthcare systems**
2. **Methodologies**
  - a) Stochastic Programming
  - b) Multi-method Simulation (agent-based and discrete-event)
  - c) Machine Learning
3. **Applications**
  - a) **Health Policy Models**  
Hospital Readmissions, Health Insurance Decision-Making, Vaccine Supply Chain, Ambulance Location
  - b) **Inpatient Scheduling and Flow**  
Operating Room Scheduling, Discharge planning
  - c) **Flipped Classroom Methods for Generation Z Engineering Students**

### PUBLICATIONS

#### **Refereed Journal Papers**

1. **Lahijanian, B.** and Alvarado, M. "Care Strategies for Reducing Hospital Readmissions using Stochastic Programming." (2021). 9 (940), 1-21. *Healthcare, (Impact Factor: 2.645)*.

#### **Submitted To Refereed Journals**

1. Alvarado, M., **Lahijanian, B.**, and Lawley, M. "Penalty and Incentive Modeling for Hospital Readmission Reduction." (2020). Submitted to ISE Transactions on Healthcare Systems Engineering, in 2<sup>nd</sup> revision.
2. Vosooghi, Z., **Lahijanian, B.** Mirzapour Alehashem, M.J., and Sheikh Sajadieh, M.

“Scenario-based redesigning of a relief supply-chain network by considering humanitarian constraints, triage, and volunteers’ help.” (2021). Submitted to Socio-Economic Planning Sciences, in 2<sup>nd</sup> revision.

3. Alvarado, M., Basinger, K., **Lahijanjan, B.**, and Alvarado, D. Karaca, M. “An Empirical Study of Video Length Preferences for Gen-Z Engineering Students in a Flipped Classroom.” (2021). Submitted to Advances in Engineering Education, under review.

#### **Manuscripts In Preparation**

1. **Lahijanjan, B.**, Alvarado, M., and Ntaimo, L. “Decomposition Algorithm for Mean-risk Stochastic Integer Programming Models.” Target Journal: INFORMS Journal on Computing.
2. **Lahijanjan, B.**, Marcal-Lopes, J., Alvarado, M., and Pardalos, M. “A Stochastic Programming Approach for Vaccine Supply Chain Management.”, Target journal: Annals of Operations Research.
3. **Lahijanjan, B.**, Alvarado, M., Basinger, K., and Alvarado, D. “Interactive Flipped Classroom for Generation Z Engineering Students.” Target journal: Journal of Engineering Education

#### **Conference Proceedings**

1. Basinger, K., **Lahijanjan, B.**, Alvarado, M., and Alvarado, D. “Creating ACTIVE Learning in an Online Environment.” In *American Society for Engineering Education (ASEE)*, Virtual Conference, July 26-29, 2021.
2. Alvarado, M., Basinger, K., **Lahijanjan, B.**, and Alvarado, D. “Teaching Simulation to Generation Z Engineering Students: Lessons Learned from a Flipped Classroom Pilot Study.” In *Winter Simulation Conference (WSC)*, Virtual Conference, Dec 14-18, 2020.
3. **Lahijanjan, B.**, Basinger, K., Karaca, M., Alvarado, D., Buzard, B., and Alvarado, M. “Flipped Classroom Video Engagement for Generation Z Engineering Students.” In *Proceedings of the 2020 IISE Annual Conference and Expo*, Virtual Conference. Oct. 31-Nov. 3, 2020.
4. Alvarado, M., Basinger, K., Alvarado, D., and **Lahijanjan, B.** “Strategies for Flipped Classroom Video Development: Educating Generation Z Engineering Students.” In *American Society for Engineering Education (ASEE)*, Virtual Conference, June 22-26, 2020.
5. **Lahijanjan, B.** and Alvarado, M. “A Statistical Analysis of Penalty vs. Incentive Designs for Hospital Readmission.” In *Proceedings of the 2019 IISE Annual Conference and Expo*, Orlando, FL. May 18-21, 2019.
6. **Lahijanjan, B.**, Fazel Zarandi, M.H., and Farahani, F.V. “Proposing a Model for Operating Room Scheduling Based on Fuzzy Surgical Duration.” In *Proceedings of the 35th North American Fuzzy Information Processing Society Annual Conference (NAFIPS)*, El Paso, TX. Oct.31-Nov.4, 2016. (PP. 1-5). IEEE. (**\*Best Paper Award**)
7. **Lahijanjan, B.**, Fazel Zarandi, M.H., and Farahani, F.V. “Double Coverage Ambulance Location Modeling using Fuzzy Traveling Time.”, In *Proceedings of the 35th North American Fuzzy Information Processing Society Annual Conference (NAFIPS)*, El Paso, TX. Oct.31-Nov.4, 2016. (PP. 1-6). IEEE.
8. **Lahijanjan, B.**, Farahani, F.V., and Fazel Zarandi, M.H. “A New Multiple Classifier System for Diagnosis of Erythematous-Squamous Diseases Based on Rough Set Feature Selection.” In *Proceedings of the IEEE World Congress on Computational Intelligence (WCCI)*, Vancouver, CA, Jul. 24-29, 2016. (PP. 2309-2316). IEEE.

## TEACHING EXPERIENCE

### Course Instructor

ESI 3327C: **Matrix and Numerical Methods in Engineering**, Spring 2022, Students: 37

ESI 3327C: **Matrix and Numerical Methods in Engineering**, Fall 2021, Students: 26

ESI 4523: **Industrial Systems Simulation**, Fall 2020, Students: 35

### Other Classroom Experience

#### University of Florida

ESI 4523: Industrial Systems Simulation, Guest Lecturer & Teaching Assistant, Spring 2021

ESI 4523: Industrial Systems Simulation, Teaching Assistant, Fall 2019, Spring 2020

ESI 4451: Lean Production Systems, Teaching Assistant, Fall 2019

#### Amirkabir University of Technology

Operation Research 2 (OR 2), Lab Instructor & Teaching Assistant, Fall 2015, Spring 2016, Fall 2016, Spring 2017

Management Information Systems (MIS), Lab Instructor & Teaching Assistant, Fall 2015, Spring 2016, Fall 2016, Spring 2017

### Mentoring Experience

ISE UF Ph.D. Program, Fall 2017-present

Advise and guide 3 Ph.D. students under the supervision of Dr. Michelle Alvarado

ISE SURF program

Summer 2021: Sage Lucas (Senior at Lehigh University)

Summer 2019: Chris Pufko (Senior at University of Virginia)

Summer 2018: Arlen Dean (PhD student at University of Michigan)

Simulation Competitions

2020: Simio Competition – Advisor to a finalist team

## HONORS AND AWARDS

### National Level

2020 Doctoral Colloquium Competition, ISE Annual Conference – 2<sup>nd</sup> Place

2020 Marilyn Little Scholarship, Altrusa International of Gainesville

2020 INFORMS Poster Competition – Finalist

2016 Best Paper Award, NAFIPS Annual Conference

### University Level

2019 Poster Competition, Annual Diversity Graduate Research Symposium – 1<sup>st</sup> Place

### Department Level

2021 Industrial & Systems Engineering Teaching Award (UF)

2019 Industrial & Systems Engineering Research Award (UF)

2017 Ranked 1<sup>st</sup> in GPA, graduate ISE students (Amirkabir University of Tech.)

2015 Ranked 1<sup>st</sup> in GPA, undergraduate ISE students (Amirkabir University of Tech.)

## PROFESSIONAL SOCIETIES

**INFORMS** (Fall 2017 – present)

Minority Issues Forum (2018-present)

Health Applications Society (2018-present)

Women in ORMS Forum (2019-present)

2021 Session Organizer and **Chair**, INFORMS Healthcare Conference

2019 Annual Meeting Session Organizer and **Chair**, INFORMS Healthcare Conference  
2019 Annual Meeting Session Organizer and **Chair**  
**Institute of Industrial Systems Engineers (IISE)** (Fall 2017 - present)  
2019 Annual Meeting Session Organizer and Chair  
2018 Annual Meeting Session Organizer and Chair  
**American Society for Engineering Education (ASEE)** (Spring 2020 – present)  
**Institute of Electrical and Electronics Engineers (IEEE)** (Fall 2015 – Fall 2020)  
2016 IEEE World Congress on Computational Intelligence Session Organizer and Chair  
2016 North American Fuzzy Information Processing Society Conference, Session Chair

## **JOURNAL ACTIVITIES, REFEREE**

IEEE Transactions on Automation Science and Engineering  
Flexible Services and Manufacturing Journal  
Annals of Operations Research  
Institute of Industrial Systems Engineers (IISE)

## **PRESENTATIONS**

### **Conference Presentations**

1. [Invited] **Lahijanian, B.** and Alvarado, M. "Health Insurance Plan Selection Under Uncertainty Using Stochastic Integer Programming." In *INFORMS Annual Meeting*, Anaheim, CA. Oct 23-27, 2021.
2. [Invited] **Lahijanian, B.** and Alvarado, M. "A Stochastic Programming Model of Health Insurance Plans Selection." In *INFORMS Healthcare Conference*, Virtual Conference, July 21-23, 2021.
3. Basinger, K., **Lahijanian, B.**, Alvarado, M., and Alvarado, D. "Creating ACTIVE Learning in an Online Environment." In *American Society for Engineering Education (ASEE)*, Virtual Conference, July 26-29, 2021.
4. [Invited] **Lahijanian, B.**, Alvarado, M., Basinger, K., and Alvarado, D. "Teaching Simulation to Generation Z Engineering Students: Lessons Learned from a Flipped Classroom Pilot Study." In *Winter Simulation Conference (WSC)*, Virtual Conference, Dec 14-18, 2020.
5. [Invited] **Lahijanian, B.** and Alvarado, M. "A Stochastic Programming Model of Health Insurance Plans Selection." In *INFORMS Annual Meeting*, Virtual Conference, Nov 7-11, 2020.
6. **Lahijanian, B.** and Alvarado, M. "Fenchel Decomposition for Mean-Risk Stochastic Mixed-Integer Programming." In *IISE Annual Conference and Expo*, Virtual Conference, Oct. 31-Nov.3, 2020.
7. **Lahijanian, B.**, Alvarado, M., Basinger, K., and Alvarado, D. "Flipped Classroom Video Engagement for Generation Z Engineering Students." In *IISE Annual Conference and Expo*, Virtual Conference, Oct. 31-Nov.3, 2020.
8. **Lahijanian, B.**, Alvarado, M., Basinger, K., and Alvarado, D. "Strategies for Flipped Classroom Video Development: Educating Generation Z Engineering Students." In *American Society for Engineering Education (ASEE)*, Virtual Conference, June 22-26, 2020.

9. [Invited] **Lahijanjan, B.** and Alvarado, M. "Chance-constrained Stochastic Programming Model for Reducing Hospital Readmissions." In *INFORMS Annual Meeting*, Seattle, WA. Oct. 20-23, 2019.
10. [Invited] **Lahijanjan, B.** and Alvarado, M. "Chance-constrained Stochastic Programming for Reducing Hospital Readmission." In *INFORMS Healthcare Conference*, Cambridge, MA. July 27-29, 2019.
11. [Invited] **Lahijanjan, B.** and Alvarado, M. "A Statistical Analysis of Penalty vs. Incentive Designs for Hospital Readmission." In *IISE Annual Conference and Expo*, Orlando, FL. May 18-21, 2019.
12. [Invited] **Lahijanjan, B.** and Alvarado, M. "Hospital Readmission Reduction Strategy using Stochastic Programming." In *INFORMS Annual Meeting*, Phoenix, AZ. Nov.4-7, 2018.
13. [Invited] **Lahijanjan, B.** and Alvarado, M. "Hospital Readmission Reduction Strategy using Stochastic Programming." In *Workshop on Risk Management Approaches in Engineering Applications*, Gainesville, FL. October 1-2, 2018.
14. [Invited] **Lahijanjan, B.** and Alvarado, M. "A Stochastic Programming Approach to Reduce Hospital Readmission using a Penalty-Incentive Mechanism." In *IISE Annual Conference and Expo*, Orlando, FL. May 19-22, 2018.
15. [Invited] **Lahijanjan, B.**, Farahani, F.V., and Zarandi, M.F. "A New Multiple Classifier System for Diagnosis of Erythemato-Squamous Diseases Based on Rough Set Feature Selection." In *IEEE World Congress on Computational Intelligence (WCCI)*, Vancouver, CA, Jul. 24-29, 2016.
16. [Invited] **Lahijanjan, B.**, Zarandi, M.F., and Farahani, F.V. "Proposing a Model for Operating Room Scheduling Based on Fuzzy Surgical Duration." In *35th North American Fuzzy Information Processing Society (NAFIPS) Annual Conference*, El Paso, TX. Oct. 31-Nov. 4, 2016.
17. [Invited] **Lahijanjan, B.**, Zarandi, M.F., and Farahani, F.V. "Double Coverage Ambulance Location Modeling using Fuzzy Traveling Time." In *Proceedings of the 35th North American Fuzzy Information Processing Society (NAFIPS) Annual Conference*, El Paso, TX. Oct. 31-Nov. 4, 2016.

#### **Poster Presentations**

1. Lahijanjan, B. "Care Strategies for Reducing Hospital Readmissions Using Stochastic Programming." 2020 IISE Annual Conference, Doctoral Colloquium Competition. (**Won \*2<sup>nd</sup> Place**)
2. Lahijanjan, B., and Alvarado, M. "Stochastic Programming Model for Care Strategies to Reduce Hospital Readmission." 2020 INFORMS student Poster Competition Session, Nov. 7-13, 2020. (**\*Finalist**)
3. Lahijanjan, B., and Alvarado, M. "Chance-constrained Stochastic Programming Model for Reducing Hospital Readmission." 2019 Diversity Graduate Research Symposium Poster Competition Session, Gainesville, FL. Oct. 30, 2019. (**\*Won 1<sup>st</sup> Place**)
4. Lahijanjan, B., and Alvarado, M. "Chance-constrained Stochastic Programming Model for Reducing Hospital Readmission." Minority Issues Forum Student Poster Competition at INFORMS Annual Meeting, Seattle, WA. Oct. 20-23, 2019.
5. Lahijanjan, B., and Alvarado, M. "A Stochastic Programming Approach to Reduce Hospital Readmission." 2019 Graduate Student Research Day Poster Competition Session, Gainesville, FL. April 2, 2019

- Lahijanian, B., and Alvarado, M. "A Stochastic Programming Approach to Reduce Hospital Readmission." 2019 College of Medicine Research Poster Session, Gainesville, FL. February 19, 2019.

## **GRADUATE COURSES**

### **Optimization**

Fundamental Mathematical Programming  
Linear Programming & Network Optimization  
Introduction to Stochastic Optimization  
Multiple Criteria Decision-Making  
Fuzzy Sets in Decision Making

### **Data Analytics**

Advanced Data Structures  
Information Technology  
Artificial Intelligence and Expert Systems

### **Stochastic Processes**

Stochastic Models & Analysis  
Queuing Systems

### **Probability/Statistics**

Applied Probability Method  
Statistical Methods

### **Healthcare**

Public Health Computing  
Models & Methods for Health Systems Eng.