

# Alireza Eshghi

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## EDUCATION

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### UCL School of Management

*M.Res in Operations and Technology*

London, United Kingdom

*Oct 2023 – Sep 2024*

- **Selected Courses\*** : Microeconomics (LBS), Operations Analytics, Statistical Data Analysis, Research Design, Research writing and presentation

### Sharif University of Technology

*M.Sc. in Industrial Engineering, Systems Optimization*

Tehran, Iran

*Oct 2020 – Feb 2023*

- **Overall GPA** : 18.64/20 (4/4)
- **Selected Courses\*** : Simulation Languages, Data-Driven Decision Making, Advanced Linear Programming, Sequencing and Scheduling, Stochastic Programming, Business Process Management, Healthcare Optimization, CAD/CAM
- **Title of M.Sc. Thesis** : Dynamic Scheduling of Patients in Emergency Departments With Continuous Phase-Type Distributions  
(Advisor: Prof. Mohsen Varmazyar)

### Sharif University of Technology

*B.Sc. in Industrial Engineering*

Tehran, Iran

*Oct 2016 – Sep 2020*

- **Overall GPA** : 17.46/20 (3.74/4)  
**Last Two Years GPA** : 18.67/20 (3.95/4)
- **Selected Courses\*** : Data Mining and Applications, Management Information Systems, Computer Information Systems, Transportation Planning, Operations Research, Linear Algebra, Statistics, Regression Analysis, Project Control, Engineering Economics, Digital Marketing, Product Development, Inventory Control and Production Planning

\*I received an Excellent grade in all the courses mentioned and was among the top students in the class

## RESEARCH INTERESTS

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### Methodologies

**Optimization:** Combinatorial Optimization Problems, Convex Programming, Stochastic Programming, Mathematical Modelling

**Simulation:** System Dynamics, Agent-based Modeling, Discrete Event Simulation, Hybrid simulation models

**Data Science:** Machine Learning, Data Mining and Statistical Analysis, Business Intelligence, Process Mining

### Applications

**Health Care:** Infectious Disease Modeling, Optimizing Health care systems, Cost Reduction in Health care

**Supply Chain Management:** Network Optimization, Transportation Optimization, Demand Forecasting

**Manufacturing:** Product Design Improvement, Scheduling and Sequencing of Machines and Operation, Inventory Management

## ACHIEVEMENTS

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**Ranked 1st in GPA among M.Sc. students,** Department of Industrial Engineering, Sharif University of Technology (Spring 2022)

**Ranked 3rd/Bronze Medalist in the National Olympiad of Industrial Engineering among top students of industrial engineering in the country,** National Organization for Educational Testing (Spring 2021)

**Ranked 3rd in the Nationwide M.Sc Entrance Exam,** National Organization for Educational Testing (Summer 2020)

**Top 10 in GPA among nearly 80 undergraduate Industrial Engineering Students for 6 semesters,** Department of Industrial Engineering, Sharif University of Technology (Sep 2017 - Sep 2020)

**Top 0.4% among 200,000 students in the nationwide university entrance exam,** National Organization for Educational Testing (Summer 2016)

## EXPERIENCE

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### Teaching Assistant

Sep 2019 – Present

*Sharif University of Technology*

*Tehran, Iran*

- **Regression Analysis**, Presented by Prof. Seyed Taghi Akhavan Niaki (Spring 2022)
- **Project Control**, Presented by Prof. Mohsen Varmazyar (Spring and Fall 2020)
- **Quality Control**, Presented by Prof. Majid Rafiee (Spring 2020)
- **Plant Layout**, Presented by Prof. Akbari Jokar (Spring 2020)
- **Production Methods**, Presented by Prof. Mahmoud Hooshmand (Fall 2019)
- **Time and Work Study**, Presented by Mahdi Shafiee (Fall 2019)

### Publications

*Sharif University of Technology, University of Auckland*

- M.Barzegar Klishomi, A.Eshghi, A.Ijadi Maghsoodi, Amir Mosavi "Determination of Optimal Control Parameters for Economic Development Aspects in COVID-19 Pandemic", Accepted to IEEE Access
- Farzaneh Mahmoudi, Alireza Eshghi, Mohadese Basirati, Erfan Hassannayebi "A Simulation Optimization Approach to Inventory Optimization in Supply Chain Networks", Accepted to IFIP Advances in Production Management Systems
- A.Eshghi, A.Ijadi Maghsoodi, M.Barzegar Klishomi, E.Hassannayebi, "SEIR-PH-LSTM and EK-CLUS-MCDA 1.2: A novel hybrid approach for prioritizing COVID-19 vaccines", To be submitted
- A.Eshghi, M.Varmazyar, "Improving patient flow in emergency departments with scheduling and Phase-type distributions", To be submitted

## PROJECTS

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### Digitalization of Finance Sector in Bel Company

Feb 2023 – Sep 2023

- In my role as a Financial Assistant at Bel Company, a multinational dairy corporation, I focused on enhancing financial processes through a strategic blend of optimization, simulation, and business intelligence tools. My objective was to streamline operations, alleviating the workload for departmental staff. As a result of these efforts, the time required for monthly reports was significantly reduced from 6 days to a maximum of 2 days.

### Network Optimization of a real company in US

Apr 2022 – Jul 2020

- This was a real project for a beverage company that wanted to find the optimum and exact location of a new warehouse on the map based on attributes like demand, cost, and distance.

### Course Projects

Apr 2019 – Present

- Process Mining of patient treatment processes using Python and ProM (Fall 2022)
- Solving a multi-Stage linear stochastic programming problem with Scenario Reduction and Nested L-Shaped method implemented in Matlab and Python (Fall 2022)
- Simulation of Multi-Level Inventory in a hospital using ARENA (Spring 2021)
- Predicting the score and number of installations of an app in Play Store using Random Forest, Regression, and classification trees in R and Python (Spring 2021)
- Finding the relationship between Nephrotoxic drugs and Acute Kidney Injury (AKI) in an ICU of a hospital in Tehran using SPSS and mathematical modeling (Fall 2020)
- Airport runway scheduling using real data from an airport (Fall 2020)

## TECHNICAL SKILLS

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**Data Science:** Python (Proficient\*), R (Proficient), Tableau (Proficient), RapidMiner (Proficient), PowerBI (Proficient), Search Engine Optimization (Familiar)

**Optimization:** GAMS (Proficient), LINGO (Proficient)

**Simulation:** Anylogic (Proficient), Anylogistix (Proficient), ARENA (Proficient)

**Statistics:** MiniTab (Proficient), SPSS (Familiar\*\*), R (Proficient)

**Other Software:** Microsoft Office (Proficient), Matlab (Familiar), Visio (Proficient), L<sup>A</sup>T<sub>E</sub>X(Proficient), SOLIDWORKS (Proficient), AUTOCAD (Proficient)

\***Proficient:** This tool was used in several academic and industrial projects

\*\***Familiar:** Attended a course that had a project with the mentioned tool