

Farnaz Farzadnia

Copenhagen, Denmark | ff.eco@cbs.dk

Research Interests

Algorithms, graphs, network, combinatorial optimization algorithm, supply chain management and logistics, metaheuristics algorithms, machine learning, deep reinforcement learning

Education

PhD | Sep 2019- Aug 2022 | Aarhus University | Aarhus, Denmark

- Ph.D., Cluster for Operations research, analytics, and logistics (CORAL)
- Dissertation title: Multimodal vehicle routing problem
- Main Supervisor: Jens Lysgaard

Publications

- **F. Farzadnia**, T. Bektas, J. Lysgaard, The cumulative school bus routing problem: Polynomial-size formulations, *Networks*, 2023, DOI: 10.1002/net.22179
- **F. Farzadnia**, J. Lysgaard, Solving the service-oriented single-route school bus routing problem: Exact and heuristic solutions, *EURO Journal on Transportation and Logistics*, 2021
- A. Alibabaei, **F. Farzadnia**, Risk Assessment in ERP Implementation, *Conference for Information Systems*, Paris, France, 2018.
- **F. Farzadnia**, A. Alibabaei, Classify Risk Factors in Implementation of ERP, *12th International Industrial Engineering Conference*, Tehran, Iran, 2016.

Computer Skills

- Programming Language: Python, C#, C++, CPLEX, Matlab, ASP.Net, SQL Server
- Working with Object Oriented Principals, Service Oriented Architecture Protocol
- Other Software: MS Office, Ms. Project, Visual Paradigm

PhD Courses

- Combinatorial programming
- Stochastic programming
- Deep reinforcement learning
- Heuristics and applications
- Teaching pedagogy for PhD students
- Research processes in operations research with applications in logistics.

Teaching Experience

- **Lecturer, Warehouse Management**
 - *Content:* Quadratic assignment problem, truck scheduling, heuristic algorithm
 - *Place:* Aarhus University, Denmark
 - *Semester:* Fall 2021
- **Teacher Assistant, Supply chain management**
 - *Content:* linear programming, goal programming, forecasting, inventory management, supply chain management, combinatorial optimization problems, one- two machine scheduling job shop scheduling, quality management (TQM) and six sigma, capacity management, sales and operations planning (S&OP), inventory management, project management
 - *Place:* Aarhus University, Denmark
 - *Semester:* Spring 2021, Spring 2022
- **Teacher Assistant, Mathematics for Economics**
 - *Content:* limit, integral, derivatives, matrix and vector algebra, single and multi variate optimization, constrained optimization
 - *Place:* Aarhus University, Denmark
 - *Semester:* Fall 2020
- **Lecturer, Operations Research**
 - *Content:* Integer programming modeling, simplex algorithm, network, shortest path, max flow
 - *Place:* Maziyar University, Iran
 - *Semester:* Fall 2012

Industry Experience

Decision Scientist | Maersk | 2022-2023 | Copenhagen- Denmark

Decision scientist, working on network optimization and cargo flow, C++, python

Senior Computer Programmer | DOTIN | 2014 – 2019 | Tehran-Iran

- Senior backend developer, C#.Net and SQL server.

Computer Programmer | RAYAN PARDAZESH KAVOSH | 2009 - 2014 | Tehran-Iran

- Backend developer C#.Net

Research Experience & Achievements

OPERATIONS RESEARCH

- Bike repositioning problem: integration of public and private transport to improve the sustainability and total cost. Providing mathematical formulation and solve the problem by exact and metaheuristics algorithms
- School bus routing problem: increase passengers satisfaction, and minimize the total travel cost, by applying exact, metaheuristics and machine learning algorithms to solve the problem
- Telecommunications network, minimize total cost
- Cross docking, truck to door assignment
- Nursing allocation for hospital wards with constraints programming
- Steiner trees method for optimal networks identification

MACHINE LEARNING AND ANALYZING DATA

- Classification of customers based on RFM and CLV values and using supervised clustering technique for customer segmentation.

- Vessel schedule reliability prediction with probabilistic modelling.
- Deep NN in Time series forecasting of demand level of public sharing bicycles in urban logistics.
- Data mining the inventory level of small and medium size (SME) companies.

INFORMATION SYSTEMS

- Analyzing the business process in banks, providing IDEF0 and flowcharts
- Classifying risk factors using PQM (process quality management)
- Advantages and disadvantages of using cloud computing in ERP

Workshops & Conferences

- NORS, Norwegian Operation Research annual conference, Bergen, Norway, 2021
- The Fourth Workshop on Optimization and its Applications, Tehran, Iran, 2012
- International Conference on Operation Research and Optimization, IPM, Tehran, Iran, 2011

Certificates

- Combinatorial Optimization, NATCOR, 2021
- Business Process Management, 16 hours, Dotin education center, 2018
- Fintech Fest for Startups, won the prize for the best idea, Tehran, Iran, 2017
- Information Technology Infrastructure Library (ITIL), 80 hours, Dotin, Iran, 2015
- Introduction to ISO 9001:2008, 9 hours, Dotin education center, Tehran, Iran, 2015
- C++, elementary and advanced, 100 hours, Tehran, 2009- 2010
- SQL Server, 40 hours, Tehran, 2012
- English language, diploma, Iran English Institute, Tehran, Iran, 2001-2005