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ABOUT ME

Passionate and experienced in applying operations research, optimization, and artificial intelligence in real life problems. Keen on all stages of problem solving, from understanding and defining the problem to implementing the solution and evaluation. Enthusiastic in algorithms and programming languages.

WORK EXPERIENCE

Principal Operations Research (OR) / Data Scientist | DHL Data & Analytics | Jul, 2023 – present

I have been working on and driving various projects such as:

- Human-centric last-mile delivery with route generation algorithms utilizing OR, statistics and Machine Learning to combine valuable tacit knowledge of experienced couriers with optimization algorithms. This project has been selected as a finalist for Wagner Prize in 2022.
- Revenue maximization project for air capacity sales with large scale global network models.
- Scenario generation, optimization, and analysis tool to support global air network design decisions.
- Container loading algorithms for trucks and air cargo with the objectives such as to minimize cost, increase utilization and minimize delays.
- Chatbot applications allowing to analyze solutions of optimization problems and enabling interactions with decision support tools to iterate over scenarios to answer complex business questions.
- Asynchronous optimization api for long running optimization problems to make it convenient and efficient to build, deploy and test optimization services for tactical and strategical decision-making projects.
- Generic and efficient multi commodity network flow solver with flexible side constraints and adaptable solution approaches to support various network design projects.
- Generic and efficient traveling salesperson problem solver with flexible side constraints such as time windows or LIFO to be used as the core solver in various vehicle routing problems.

Senior OR / Data Scientist | Data Analytics, Center of Excellence, DPDHL | Jul, 2020 – Jun, 2023

OR / Data Scientist | Data Analytics, Center of Excellence, DPDHL | Sep, 2018 – Jun 2020

Postdoctoral Research Fellow Engineering Systems and Design, Singapore University of Technology and Design | Nov, 2014 – Aug, 2018

- I had the opportunity to work closely with my supervisors [Prof. Karthik Natarajan](#) and [Prof. Selin Damla Ahipařaođlu](#). Our research focused on discrete choice models and stochastic traffic equilibrium. We worked on to make use of robust optimization techniques to define and model the distributionally robust traffic equilibrium as a new convex optimization formulation which is provably efficiently solvable and has the flexibility of allowing for general marginal distributions. During my postdoc, I participated the MIT Transportation Networks and Smart Mobility: Methods and Solutions program lead by Prof. M. Ben-Akiva.

- I have been a lecturer of the Capstone course for four years where I taught and supervised real-life projects of senior students. I was very keen on this task particularly due to the multidisciplinary nature of the projects and collaboration both with students and industry.
- I feel extremely lucky for the opportunity to work with [Prof. Peter Jackson](#) on [Arcadia with Capella](#), a modelling methodology and tool for complex systems. Systems Design is always a favorite topic for me, and it was a great experience and pleasure to work with Prof. Jackson. You may find [here](#) the tutorial we created.

Research Assistant Department of Industrial Engineering, Middle East Technical University | Dec, 2010 – Oct, 2014

- I had been a teaching assistant for various courses such as Operations Research, Production & Service Information Systems, Stochastic Models, Revenue Management, Systems and Organizations.
- I was a part of the Systems Design committee with supervising and organizational tasks for the real-life systems design projects of the senior students.
- I took place in industrial OR projects such as the assembly line design project for car manufacturer [Tofas](#) that simultaneously optimizes make-or-buy / outsourcing decisions of sub-components.

Project Assistant Computer Center, Middle East Technical University | Oct, 2006 – Dec, 2010

During my graduate studies, I had taken place in various software projects at my university mostly focusing on process optimization for in-campus processes.

ACADEMIC TRAINING

Doctor of Philosophy Industrial Engineering Department, Middle East Technical University | 2009 – 2014

Title of Dissertation: Airline Disruption Management

Supervisors: [Prof. Sinan Gürel](#) and [Prof. M. Selim Aktürk](#)

Master of Science Industrial Engineering Department, Middle East Technical University | 2006 - 2009

Title of Dissertation: Two-Sided Assembly Line Balancing: Models and Heuristics

Supervisors: [Prof. Ömer Kirca](#)

Bachelor of Science Industrial Engineering Department, Middle East Technical University | 2002 – 2006

INTERESTS

Optimization

Graph Theory & Network Planning

Algorithms & Heuristic Search

Artificial Intelligence

Systems Thinking

System Simulation

Transportation Systems & Logistics

Discrete Choice Models

programming languages

experienced: Rust 🦀, C#, React, Typescript

fluent: Python, C++, Go

investigating: Zig, F#

hobbies

football 🏈 basketball 🏀

hiking 🏞️ biking 🚲

travelling