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https://scholar.google.com/citations?user=Dey7_w0AAAAJ&hl=en&oi=sra%20

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PROFESSIONAL SUMMARY

Researcher with 9+ years experience in the academic environment. So eager for challenges requiring the mathematical background such as stochastic optimization, optimal control theory, reinforcement learning, signal processing, estimation theory. Can work independently, problem-solving mindset, eager to learn and try new ideas, and solving problems using a different way than conventional. At the moment, my research develops theory and algorithms at the intersection of reinforcement learning and stochastic control, with a focus on forward-backward dynamics.

RESEARCH INTERESTs

Reinforcement Learning, Stochastic Optimal Control Theory, Parametric Optimizations, Iterative Optimization Algorithms, Kernel Methods.

SKILLS

- Deep Reinforcement Learning Methods
- Stochastic Optimization and Control Theory
- Machine Learning Methods
- Iterative Optimization Algorithms
- Programming Languages: Python / MATLAB / Latex
- Wireless Communication and Networking
- Statistical Signal Processing and Estimation Theory

EDUCATION

Post-Doctoral Researcher 2024-current

Aalto University, Espoo, Finland.

- Description: My research focuses on the forward-backward reinforcement learning, its convergence analysis and characteristics of an optimal policy, as well as on deep-learning methods for stochastic optimal control problems and time-varying optimization, potentially applied in the context of data science, control problems, cache communication and edge systems.

PhD Candidate 2019-2024

Aalto University, Espoo, Finland.

- GPA: 4.8
- Project: Collaborative Probabilistic Edge Caching with Stochastic Geometry Analysis.
- Description: I have developed a time-varying optimization mechanism, competitive to the correction-prediction method, and combined reinforcement learning algorithms with stochastic geometry framework to solve a timely problem in the context of edge communications.

International Visiting Experience

- TU Berlin, Berlin, Germany. 2021
- University of Alberta, Edmonton, Canada. 2018

Master of Science: Electrical Engineering, Signal Processing 2010-2012

Sharif University of Technology – Tehran, Iran.

- GPA: 4.2
- Thesis: Particle Filter and Its Application in Robust Tracking.
- Description: I devised robust tracking algorithms based on the particle filter and quadratic programming for trajectory estimation.

Bachelor of Science: Electrical Engineering 2007-2010

Sharif University of Technology – Tehran, Iran.

- GPA: 4.1
- Thesis: Examination of image compression and de-noising methods.

Career break

I have had a career break due to a parental leave. 2025

AWARDS

Nokia Foundation Scholarship 2022

Graduate Fellowship from Telecommunication Research Center 2012

TEACHING, SUPERVISION & CONFERENCE SERVICE

Course Developer and Assistant, Aalto University

Co-Supervision of two PhD Students, Aalto University

Course Assistant at Sharif University of Technology

Session Chair (IEEE CDC 2023)

LANGUAGE SKILLS

Farsi: Native

English: Advanced

SELECTED PUBLICATIONS

- Mohsen Amidzadeh, Mario Di Francesco, "FB-MOAC: A Reinforcement Learning Algorithm for Forward-Backward Markov Decision Processes", *Transaction on Machine Learning Research*, 2025.
- Mohsen Amidzadeh, "A Scale-Independent Multi-Objective Reinforcement Learning with Convergence Analysis", *IEEE Control and Decision Conference, 2023.*
- Mohsen Amidzadeh, "Time-Varying Optimization with Optimal Parametric Function", *IEEE Control and Decision Conference, 2023.*
- Ashvin Srinivasan, Mohsen Amidzadeh, J Zhang, O Tirkkonen, "Cache Policy Design via Reinforcement Learning for Cellular Networks in Non-Stationary Environment", *IEEE International Conference on Communications Workshops, 2023.*
- Ashvin Srinivasan, Mohsen Amidzadeh, Junshan Zhang, Olav Tirkkonen, "Adaptive cache policy optimization through deep reinforcement learning in dynamic cellular networks", *invited to publish in Journal of Intelligent and Converged Networks, 2024.*
- Mohsen Amidzadeh, Olav Tirkkonen, Giuseppe Caire, "Optimal Multicast-Cache-Aided On-demand Streaming in Heterogeneous Wireless Networks via a Path/Surface Following Approach" *IEEE Transactions on Wireless Communications, 2023.*
- Mohsen Amidzadeh, Hanan Al-Tous, Giuseppe Caire and Olav Tirkkonen, "Cellular traffic offloading with optimized compound single-point unicast and cache-based multipoint multicast", IEEE Wireless Communications and Networking Conference, 2022.
- Mohsen Amidzadeh, Hanan Al-Tous, Giuseppe Caire and Olav Tirkkonen, "Caching in Cellular Networks Based on Multipoint Multicast Transmissions", *IEEE Transactions on Wireless Communications, October 2022.*
- Mohsen Amidzadeh, Hanan Al-Tous, Olav Tirkkonen, Junshan Zhang, "Joint Cache Placement and Delivery Design using Reinforcement Learning for Cellular Networks", *in IEEE VTC 2021.*

HOBBIES

Bouldering, Mountaineering, Table Tennis

REFFERENCE

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Olav Tirkkonen, Professor of Communication and Networking Department, Aalto University, Espoo, Finland. *Email: olav.tirkkonen@aalto.fi*

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