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PROFESSIONAL SUMMARY

Researcher and R&D engineer with 9+ years experience in the academic environment and 7+ years experience in industry. 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.

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, edge computing/communication systems.

PhD Candidate: Communication Theory 2019-Current

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.

AWARDS

Nokia Foundation Scholarship 2022

Graduate Fellowship from Telecommunication Research Center 2012

FINISHED PROJECTS

Coded Collaborative Caching for Wireless Energy Efficiency 2019-2023

Reinforcement Learning for Dynamic Wireless Caching 2023-2024

Development and Application of Reinforcement Learning Algorithms for New Models of Markov Processes. 2024-current

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)

LANGUAGE SKILLS

Farsi: Native

English: Advanced

SELECTED PUBLICATIONS

- Mohsen Amidzadeh, "A Convergence-Guaranteed Algorithm for Stochastic Optimal Control Problems", arxiv, https://arxiv.org/abs/2603.14310, 2026.
- 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 Novel Path-Following Method for Time-Varying Optimizations with Optimal Parametric Functions", *invited to publish in Journal of Electrical Electronics Engineering (JEEE)*, 2024.
- 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.*
- 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.*
- 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.*
- 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.*
- 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*

Masoud Babaei-zadeh, Professor of Electrical Eng. Department, Sharif University of Technology, Tehran, Iran. *Email: mbzadeh@yahoo.com*