Andi Nika

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RESEARCH INTERESTS

Theoretical reinforcement learning (RL), corruption-robustness in RL, multi-agent RL, reinforcement learning from human feedback.

EDUCATION

PhD in Computer Science, November 2021 - current.
Max Planck Institute for Software Systems, Saarbrücken, Germany.

Master of Science in Electrical and Electronics Engineering
Thesis: *Contextual Combinatorial Volatile Multi-Armed Bandits in Compact Context Spaces*
Bilkent University, Turkey, June 2021

Master of Science in Mathematics
Thesis: *The pandemic fusion system for endomorphism algebras of p-permutation modules*
Bilkent University, Turkey, September 2018

Bachelor of Science in Mathematics
University of Tirana, Albania, August 2015

PUBLICATIONS & PREPRINTS

- **Andi Nika**, Jonathan Nöther, Debmalya Mandal, Parameswaran Kamalaruban, Adish Singla, and Goran Radanović. Policy Teaching via Data Poisoning in Learning from Human Preferences.
  To appear in *AISTATS, 2025*.

- **Andi Nika**, Debmalya Mandal, Adish Singla, and Goran Radanović. Corruption-Robust Offline Two-Player Zero-Sum Markov Games.
  To appear in *AISTATS, 2025* as **Oral Presentation**. (Top 2% of accepted papers) URL https://arxiv.org/pdf/2403.07933

- **Andi Nika**, Debmalya Mandal, Parameswaran Kamalaruban, Georgios Tzannetos, Goran Radanović, and Adish Singla. Reward Model Learning vs. Direct Policy Optimization: A Comparative Analysis of Learning from Human Preferences.
  In *ICML, 2024*. URL https://openreview.net/pdf?id=JQlEUfzhuA

- **Andi Nika**, Jonathan Nöther, Adish Singla, and Goran Radanović. Defending Against Unknown Corrupted Agents: Reinforcement Learning of Adversarially Robust Nash Equilibria.
  In *TMLR 2024* and *ICML Workshop on Foundations of Reinforcement Learning and Control, 2024*. URL https://openreview.net/pdf?id=62pcoIqovw

- Debmalya Mandal, **Andi Nika**, Parameswaran Kamalaruban, Adish Singla, and Goran Radanović. Corruption-Robust Offline Reinforcement Learning from Human Feedback.
  arXiv preprint. URL https://arxiv.org/pdf/2402.06734

- **Andi Nika**, Adish Singla, and Goran Radanović. Online Defense Strategies for Reinforcement Learning Against Adaptive Reward Poisoning.
  In *AISTATS, 2023*. URL https://proceedings.mlr.press/v206/nika23a/nika23a.pdf

- **Andi Nika**, Sepehr Elahi, and Cem Tekin. Contextual combinatorial volatile multi-armed bandit with adaptive discretization.
  In *AISTATS, 2020*. URL http://proceedings. mlr.press/v108/nika20a.html

- Muhammad Anjum Qureshi, **Andi Nika**[†], and Cem Tekin. Multi-user Small Base Station Association via Contextual Combinatorial Volatile Bandits.
  In *IEEE Transactions on Communications*
  URL https://ieeexplore.ieee.org/document/9373701

- Sepehr Elahi, **Andi Nika**[†], and Cem Tekin. Online Context-Aware Task Assignment in Mobile Crowdsourcing via Adaptive Discretization.
  In *IEEE Transactions on Network Science and Engineering, 2023*
  URL https://ieeexplore.ieee.org/document/9894096

- **Andi Nika**, Sepehr Elahi, and Cem Tekin. Contextual Combinatorial Volatile Bandits via Gaussian Processes.
  arXiv preprint. URL https://arxiv.org/pdf/2110.02248.pdf

- **Andi Nika**, Sepehr Elahi, Kerem Bozgan, Çağın Ararat, and Cem Tekin. Pareto Active Learning with Gaussian Processes and Adaptive Discretization.
  arXiv preprint. URL https://arxiv.org/abs/2006.14061

AWARDS AND SCHOLARSHIP	**Best Reviewer Award** (top 8% of reviewers) in NeurIPS 2024.

Graduate Research Conference **best presentation award**, Bilkent University, 2021.

TÜBİTAK research scholarship, 2018 - present.

Full Scholarship from Bilkent University for graduate studies in the Mathematics Department, 2016 - 2018.

Participated as Staff in *The 33rd Balkan Mathematical Olympiad*, Albania, May 2016.

First representative of the Albanian team *in 27th Balkan Mathematical Olympiad* (BMO), Moldova, May 2010.

First Place in *The Albanian National Mathematical Olympiad*, selection phase for the BMO team, Moldova, May 2010.

First Place in *The Albanian Scientific Contest*, Albania, April 2009.

SKILLS

Language proficiency: English, Level C2 (TOEFL iBT score: **116/120**)
Programming Languages: Matlab and Python.
Operating Systems: Windows

WORK EXPERIENCE

Doctoral Researcher at the Machine Teaching and Multi-agent System Labs, MPI-SWS, 2021 - present.

Research Assistant at CYBORG lab (http://cyborg.bilkent.edu.tr/), Bilkent University, 2018 - 2021.

[†] First two authors contribute equally.

Teaching assistant in the Electrical and Electronics Engineering Department, Bilkent University, 2018 - 2021:

- EEE 202 (Circuit Theory)
- MATH 242 (Engineering Mathematics)
- EEE 361 (Linear Algebra in Data Analysis and Machine Learning)

Teaching assistant in the Mathematics Department, Bilkent University, 2016 - 2018:

- MATH 102 (Calculus 2)
- MATH 105 (Introduction to Calculus 1)

Coached high-school students for national math competitions, Albania, 2014 - 2015.

EXTRA-CURRICULAR ACTIVITIES AND INTERESTS

One of **top 10** finalists in the singing competition *Voice of Albania*, Albania, 2016.

Silver medal in *8th International Turkish Olympiad* (singing category), Turkey, 2010.

Part of Aikido Club at Bilkent University for one year.

I am also curious about understanding the human nature through the lens of analytical psychology, philosophy and classical literature. In particular, I am interested in the works of C. Jung, Plato, F. Nietzsche, F. Dostoevsky, A. Huxley, H. Hesse, etc.