Ali Mortazavi

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Education

University of Victoria Victoria, BC, Canada
Ph.D. Computer Science, Jan 2021 – Expected Aug 2026

- Research focus: Online Learning and Game Theory
- Supervised by Prof. Nishant Mehta
- Publications: NeurIPS and AISTATS
- Coursework: Online Learning, Collective Decision Making, Algorithms for Convex Optimization, Statistical Machine Learning Theory.

Amirkabir University of Technology Tehran, Iran
M.Sc. Artificial Intelligence, Sept 2017 – Sept 2020

- Coursework: Statistical Natural Language Processing, Probabilistic Graphical Models, Big Data Analytics

Amirkabir University of Technology Tehran, Iran
B.Sc. Computer Software Engineering, Sept 2013 – Sept 2017

Experience

PhD **Research Assistant** Jan 2021 -
Machine Learning Theory Group University of Victoria

- **Best-Case Lower Bounds in Online Learning**: `(FTRL, Anytime regret, Fairness)`
  Characterized optimal loss patterns for the HEDGE algorithm when the number of incoming data points is unknown. Advanced understanding of how online algorithms can maintain fairness across groups in adaptive decision-making, even without knowing group sizes in advance. Published in NeurIPS 2021.
- **Exploring the Price of Truthfulness in Bandits** `(Information Elicitation, Incentives, Multi-armed Bandits)`
  Demonstrated a worst-case $\Omega(T^{2/3})$ regret lower bound for one of the main strategy-proof bandit algorithms, highlighting challenges in learning within strategic environments with reputation-maximizing agents. Published in AISTATS 2024.

Amirkabir University of Technology Jan 2017 – September 2017
Bachelor's Project Tehran, Iran

- **Edge-Reusable Traveling Salesman Problem Optimization** `(Graph, Genetic Algorithms, Simulated Annealing)`
  Designed genetic and simulated annealing algorithms for a variant of the Traveling Salesman Problem (TSP) with edge reuse at reduced cost. Encoded traveling paths as ordered vertex sets and introduced operations to convert paths. Compared heuristic performance against optimal solutions from Integer Linear Programming on small graphs. (Code and Report)

Applied Machine Learning Projects

- **Image Denoising and Segmentation (report)** `(Python, Markov Random Fields, Image Processing)`
  Optimized image denoising and segmentation with Simulated Annealing and Markov Random Fields, comparing performance across HSV, RGB, and Grayscale color spaces.
- **Text Summarization (report)**: `(Python, TensorFlow, NLP)`
  Developed a graph-based text summarization method using word2vec and PageRank, achieving superior performance with word-level representations evaluated by ROUGE metrics.

Publications

- Ali Mortazavi, Junhao Lin, and Nishant Mehta. "On the price of exact truthfulness in incentive-compatible online learning with bandit feedback: a regret lower bound for WSU-UX." International Conference on Artificial Intelligence and Statistics. PMLR, 2024. (**AISTATS 2024**)
- Cristóbal Guzmán, and Nishant Mehta, and Ali Mortazavi."Best-case lower bounds in online learning" Advances in Neural Information Processing Systems 34 (2021). (**NeurIPS 2021**) (Link to the presentation)

Internship

Shanghai University of Finance and Economics — Shanghai, China
Research Internship at Institute for Theoretical Computer Science — August 2019 – September 2019

- Hosted by Prof. Nick Gravin `(Online Stochastic Matching, Competitive Ratio)`
- Project: Worked on Online Stochastic Matching with a general graph model where edge appearances follow a Bernoulli distribution. Focused on developing and analyzing algorithms intended to exceed the traditional 1/2 competitive ratio, enhancing my skills in algorithm design and theoretical analysis.

Service

Reviewer for AISTATS 2025, NeurIPS 2024

Technical Skills

Languages: Python, Java, C++
Frameworks: NumPy, Pandas, Matplotlib, TensorFlow

Teaching Experience

Teaching Assistant — Jan 2021 -
Computer Science Department — University of Victoria

- **Notable Responsibilities**: Designed and Taught labs and tutorials, helped prepare new TAs with teaching tasks
- **Courses**: Algorithms and Data Structure II, Theory of Computation, Data Mining, Collective Decision-Making, Advanced Data Structure and Optimization.

Research Interest

- Online Learning
- Randomized Algorithms
- Algorithmic Game Theory
- Mechanism Design

Awards

- University of Victoria Graduate Awards for Top-Performing Students 2021-2024
- University of Victoria Graduate TA Award 2021-2024
- Charles S. Humphrey Graduate Student Award 2022
- UVic PhD Fellowship Award 2021-2022
- Ranked 3rd (out of 100) in terms of Cumulative GPA among students of computer engineering, 2013 Entrance 2017
- Awarded direct admission to the M.Sc. program in Artificial Intelligence at Amirkabir University of Technology as a Talented Undergraduate Student 2017