Parsa Mirtaheri

Department of Computer Science and Engineering
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Education

Ph.D. in Computer Science 01/23 - Expected 06/28
Department of Computer Science and Engineering
University of California, San Diego
Advisor: Misha Belkin
Selected Courses: Data Systems for Machine Learning, Natural Language Processing, Probability Theory, Linear Algebra, Mathematics of Deep Learning, Unsupervised Learning

B.Sc. in Computer Engineering 09/16 - 06/21
Department of Computer Engineering
Sharif University of Technology, Tehran, Iran
Selected Courses: Data Structures and Algorithms, Machine Learning, Stochastic Processes, Algorithmic Game Theory, Information Retrieval, Information Theory, Automata Theory

Research Experience

Visiting Graduate Student, Simons Institute for the Theory of Computing at the University of California, Berkeley Fall 2024
Researching the reasoning capabilities of transformer-based models as part of the Modern Paradigms in Generalization program.

Graduate Student Researcher, University of California, San Diego
Researching the feature learning mechanism in neural networks and kernel machines that adapt to the low-dimensional structure of the task in Belkin Lab.

Researcher, Sharif University of Technology Fall 2021
Worked on adversarial robustness and theoretical foundations of deep learning under the supervision of Prof. Rohban in the Robust and Interpretable Machine Learning lab.

Remote Research Intern, Technical University of Munich Summer 2020
Computer Vision group of Prof. Navab.

Research Intern, IST Austria Summer 2019
Game Theory & Computer-Aided Verification group of Prof. Chatterjee.

Publications

Parsa Mirtaheri, Ezra Edelman, Samy Jelassi, Eran Malach, Enric Boix-Adserà.
Let Me Think! A Long Chain of Thought Can Be Worth Exponentially Many Short Ones.
arXiv:2505.21825, To appear in NeurIPS 2025.

Ali Shirali, Arash Nasr-Esfahany, Abdullah Omar Alomar, **Parsa Mirtaheri**, Rediet Abebe, Ariel D. Procaccia.
Direct Alignment with Heterogeneous Preferences.
arXiv:2502.16320, To appear in NeurIPS 2025.

Parsa Mirtaheri, Mikhail Belkin.
Detecting Motivated Reasoning in the Internal Representations of Language Models.
Preprint, 2025.

Honors & Awards

- Bronze Medal in the ACM-ICPC World Finals, Porto, Portugal 2019
- Silver Medal in 28th International Olympiad in Informatics (IOI), Kazan, Russia 2016

- Undergraduate Excellence Award, CAMP, Technical University of Munich 2020
- Admission with a full scholarship to IST Summer Internship by OeAD-GmbH, Austria 2019
- Gold Medal in 24th Iran National Olympiad in Informatics, Tehran, Iran 2015
- Silver Medal (ranked 2nd) in National Scientific Olympiad in Computer Engineering 2021

Work Experience

Research and Development Engineer, Map and Navigation Application Summer 2017 - Fall 2018

Developed the navigation service algorithm and the conflation algorithms for importing data from OpenStreetMap. During the first year, our application gained 200,000 users. I was one of five members of the team.

Course Designer, Quera Summer 2020

During my undergraduate industry internship at Quera, I was part of the team that designed two introductory courses on machine learning. About 8,000 students enrolled in the courses.

Teaching Experience

Teaching Assistant, University of California, San Diego

- Online Learning, Instructor: Prof. Freund 2025
- Mathematics of Deep Learning, Instructor: Prof. Belkin 2024
- Machine Learning, Instructor: Prof. Belkin 2023

Teaching Assistant, Sharif University of Technology

- Probability and Statistics, Instructor: Prof. Omidvar 2020
- Discrete Structures, Instructor: Prof. Zarrabi 2020
- Machine Learning, Instructor: Prof. Rohban 2020
- Design of Algorithms, Instructor: Prof. Zarrabi 2019
- Artificial Intelligence, Instructor: Prof. Rohban 2019
- Data Structures and Algorithms, Instructor: Prof. Sharifi 2018

Member of Iran National Olympiad in Informatics Scientific Committee
Head of Iran's IOI team selection exams scientific committee 2017, 2020

Member of ACM-ICPC West Asia Regional Contest Scientific Committee 2019, 2020

Lecturer, Allameh Helli 3 High School 2015-2016

Volunteer Experience

Elected Member of the Student Scientific Chapter (SCC) of CE Department 2018-2019

Head of the Scientific & Technical Content Team of Sharif AIC Winter 2018

Executive Director of the 1st Internship Seminar Series, *Interna* Fall 2018

Editor-in-chief of CE Department Collegiate Journal, *Rayanesh* 2017-2018

Skills

Programming Languages: C/C++, Python, Java, Pascal, SQL, Bash
Libraries: PyTorch, NumPy, Pandas, SciPy, Scikit-learn
Typesetting: LaTeX