

KEIVAN REZAEI

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Research Interest

Deep Learning Robustness and Interpretability Mechanism Design

Education

- **Univesity of Maryland**, College Park, MD, USA September 2022 - Present
Department of Computer Science
Ph.D. in Computer Science
under the supervision of Prof. **Soheil Feizi** and Prof. **Mohammad Hajiaghayi**.
- **Sharif University of Technology**, Tehran, Iran September 2018 - July 2022
Department of Computer Engineering
B.Sc. in Computer Engineering **GPA : 19.85 / 20, Rank 1st**

Research Experience

- **Graduate Research Assistant at University of Maryland**, *September 2022-Present*
* Research on machine learning robustness and interpretability.
under the supervision of Prof. **Soheil Feizi** and Prof. **Mohammad Hajiaghayi**.
- **Summer Internship at EPFL**, Theory of Machine Learning (TML) Lab, *Summer 2021*
* Research on the convergence rate of the optimization algorithms in machine learning
under supervision of Prof. **Nicolas Flammarion**.
- **Summer Internship at Max Planck Institute**, *Summer 2020*
* Research on solving semi-definite programming based on Physarum mathematical model.
under supervision of Prof. **Andreas Karrenbauer**.

Publications

- **Run-Off Election: Improved Provable Defense against Data Poisoning Attacks**
Keivan Rezaei*, Kiarash Banihashem*, Atoosa Chegini, Soheil Feizi *ICML 2023*
- **Text-To-Concept (and Back) via Cross-Model Alignment**
Keivan Rezaei*, Mazda Moayeri*, Maziar Sanjabi, Soheil Feizi *ICML 2023*
- **Multi-agent Delegated Search**
Mohammad Hajiaghayi, Keivan Rezaei, Suho Shin *EC 2023*

Working Projects

- **A Regret Analysis of Repeated Delegated Choice**
Mohammad Hajiaghayi, Mohammad Mahdavi, Keivan Rezaei, and Suho Shin **Under Review**
- **Putting Interpretability First: Diagnosing Failure Modes in Human Terms**
Keivan Rezaei, Mazda Moayeri, Mehrdad Saberi, Soheil Feizi
- **Robustness of AI-Image Detectors: Fundamental Constraints and Practical Attacks**

Honors and Awards

- *ICPC*
 - **3rd Team**, *ICPC North America Championship 2023, Orlando*
 - **33rd Team**, *ICPC World Final 2020, Moscow*
 - **1st Team**, *Asian Regional Contest 2019, Tehran*
 - **2nd Team**, *Asian Regional Contest 2018, Tehran*
- *Informatics Olympiads*
 - **Silver Medal**, *IOI 2018*
30th International Olympiad in Informatics, Tsukuba Ibrakai, Japan
 - **Gold Medal**, *INOI 2017*
27th Iranian National Olympiad in Informatics, Tehran, Iran
- Awarded the University of Maryland Dean's Fellowship.

Teaching Experience

- **Design and Analysis of Algorithms (TA)**, University of Maryland, *Fall 2022*
- **Design of Algorithms (TA)**, Sharif University of Technology, *Fall 2020, 2021*
- **Compiler Design (TA)**, Sharif University of Technology, *Fall 2020*
- **Algorithm instructor**, Allame Helli Highschool, *2017-2019*

Other Experiences

- **Data Scientist at Torob**, *Winter 2022 - Summer 2022*
 - * Torob is a search engine that allows customers to find the cheapest price for items!
 - * Working on improvement, and analyzing Torob's search engine results.
 - * Baseline solutions for the Torob Challenge.
- **Member of INOI Committee**, *Fall 2019 - Summer 2022*
 - * **Iran's Team Leader at IOI 2021.**
 - * Responsible for designing exams to select talented students.
 - * Responsible for conducting camps for preparing students.
- **Sharif AI Challenge**, *Fall 2019, Fall 2020*
 - * Responsible for developing server and simulating game.
 - * Responsible for designing game.
- **Head of Quera College Data Structure Course**, *Spring 2019*
Responsible for providing educational materials.

Skills

- **Machine Learning Libraries**, Experienced with torch, scikit-learn, numpy, pandas.
- **Linux**, Experienced in Linux shell and Bash scripts.
- **Algorithms and Competitive Programming**, as *IOI* and *ICPC* awards suggest.
- **Programming Languages**, proficient with C++, Python, Java and many other languages.
- **Software Engineering**, familiar with object-oriented design patterns and other development methodologies.