

# KEIVAN REZAEI

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## Research Interest

vision-language models, interpretability

## 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 1<sup>st</sup>**

## Publications

- **PRIME: Prioritizing Interpretability in Failure Mode Extraction**  
Keivan Rezaei, Mehrdad Saberi, Mazda Moayeri, Soheil Feizi *ICLR 2024*
- **On Mechanistic Knowledge Localization in Text-to-Image Generative Models**  
Keivan Rezaei\*, Saymyadeep Basu\*, Priyatham Kattakinda, Vlad I Morariu,  
Nanxuan Zhao, Ryan A. Rossi, Varun Manjunatha, Soheil Feizi *ICML 2024*
- **Text-To-Concept (and Back) via Cross-Model Alignment**  
Keivan Rezaei\*, Mazda Moayeri\*, Maziar Sanjabi, Soheil Feizi *ICML 2023*
- **Run-Off Election: Improved Provable Defense against Data Poisoning Attacks**  
Keivan Rezaei\*, Kiarash Banihashem\*, Atoosa Chegini, Soheil Feizi *ICML 2023*
- **Robustness of AI-Image Detectors: Fundamental Constraints and Practical Attacks**  
Mehrdad Saberi, Vinu Sankar Sadasivan, Keivan Rezaei, Aounon Kumar,  
Atoosa Chegini, Wenxiao Wang, Soheil Feizi *ICLR 2024*
- **Multi-agent Delegated Search**  
 $\alpha, \beta$  Mohammad Hajiaghayi, Keivan Rezaei, Suho Shin *EC 2023*
- **A Regret Analysis of Repeated Delegated Choice**  
 $\alpha, \beta$  Mohammad Hajiaghayi, Mohammad Mahdavi, Keivan Rezaei, and Suho Shin *AAAI 2024*

## Pre-prints (Under Review)

- **Online Advertisements with LLMs: Opportunities and Challenges**  
Soheil Feizi, MohammadTaghi Hajiaghayi, Keivan Rezaei, Suho Shin

## Research Experience

- **Graduate Research Assistant at University of Maryland, September 2022-Present**  
\* Research on intepretability, robustness, and biases in vision-language generative and discriminative models

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**.

## Honors and Awards

- *International Collegiate Programming Contest (ICPC)*
  - **ICPC 2023 World-Finalist**, *Sharm El-Sheikh, Egypt*
  - **3<sup>rd</sup> Team**, ICPC North America Championship 2023, *Orlando, US*
  - **33<sup>rd</sup> Team**, ICPC World Finals 2020, *Moscow, Russia*
  - **1<sup>st</sup> Team**, Asian Regional Contest 2019, *Tehran, Iran*
  - **2<sup>nd</sup> Team**, Asian Regional Contest 2018, *Tehran, Iran*
- *Informatics Olympiads*
  - **Silver Medal**, *IOI 2018*  
30<sup>th</sup> International Olympiad in Informatics, Tsukuba Ibrakai, Japan
  - **Gold Medal**, *INOI 2017*  
27<sup>th</sup> Iranian National Olympiad in Informatics, Tehran, Iran
  - **Silver Medal**, *APIO 2018*  
Asia-Pacific Informatics Olympiad 2018
- 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.