

Amin Rakhsha

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RESEARCH INTERESTS

Machine Learning, Reinforcement Learning, Statistics

EDUCATION

Sharif University of Technology, Tehran, Iran

B.Sc., Computer Engineering

Sep. 2016 - Expected Sep. 2020

- GPA: 19.70/20, ranked 1st among 108 students admitted in 2016 (as of Nov. 2019)

- GPA in Major Subject: 19.89/20 (as of Nov. 2019)

Iranian Young Scholars Club, Tehran, Iran

National Mathematical Olympiad Gold Medalists Education Period Oct. 2015 - Jul. 2016

- University Courses: Mathematical Analysis I, Abstract Algebra, Linear Programming

- Olympiad Courses: Algebra, Combinatorics, Number Theory, Geometry

- Qualified for Iran's six-person team in International Mathematical Olympiad.

Allameh Helli High School, Affiliated with National Organization for Development of Exceptional Talents (NODET), Tehran, Iran

Diploma in Mathematics and Physics

Sep. 2012 - May 2016

- Diploma GPA: 19.97/20, ranked 1st among 300+ students

MANUSCRIPTS IN PREPARATION

Rakhsha, A., Radanovic, G., and Singla, A. Data poisoning attacks in reinforcement learning

RESEARCH EXPERIENCE

Max Planck Institute for Software Systems (MPI-SWS), Saarbrücken, Germany

Research Intern Under Supervision of Prof. Adish Singla

Jul. - Sep. 2019

- Formulated the problem of adversarial attacks in reinforcement learning (RL).

- Inspected the problem of poisoning rewards in online and offline RL settings.

Chinese University of Hong Kong (CUHK), Institute of Theoretical Computer Science and Communications, Hong Kong

Funded Summer Research Program Participant

Jul. - Aug. 2018

- Worked on improving the optimization algorithm used for distributionally robust logistic regression under supervision of Prof. Anthony Man-Cho So. (in a team of three students).

- Analyzed randomness extraction from generalized Santha-Vazirani sources with infinite dice under supervision of Prof. Andrej Bogdanov. (in a team of three students).

HONORS AND AWARDS

• **National Elite Foundation Fellowship** 2015 - present

• **Silver Medal** in International Mathematical Olympiad (IMO) [\[link\]](#) Jul. 2016

• **Gold Medal** in Iran National Mathematical Olympiad Sep. 2015

• **Silver Medal** in International Mathematics Competition (IMC) [\[link\]](#) Jul. 2014

• **Champion Team** in International Mathematics Competition (IMC) [\[link\]](#) Jul. 2014
Iran B team member

• **Silver Medal** in International Mathematics Competition (IMC) [\[link\]](#) Jul. 2011

TEACHING EXPERIENCE

• **Design of Algorithms**, Instructor: Prof. Mohammad Ali Abam Fall 2019
Instructed the discussion classes. Designed assignments. Graded exams.

• **Linear Algebra**, Instructor: Prof. Abolfazl Motahari Fall 2018
Designed the syllabus. Designed and graded assignments.

• **Data Structures and Algorithms**, Instructor: Prof. Mohammad Ghodsi Fall 2018
Designed and graded assignments.

• **Probability and Statistics**, Instructor: Prof. Abolfazl Motahari Fall 2017
Instructed the discussion classes. Created reading materials. Designed and graded assignments.

OTHER EXPERIENCES	Data Days Machine Learning and Data Science Competition Dec. 2018 Designed the tasks and judged contestants' results and methods as a member of scientific staff.
	SharifWorks Job-Finder Website Oct. - Dec. 2018 Developed a job-finding website using Django as a course project with two other students.
	An Analysis of Globally Famous People Mar. - Jul. 2018 Proposed the project for university Data Analysis course, tied for first place among 70+ students. Studied 13 000 globally famous people using multiple datasets as well as crawling Wikipedia.
	Field Introduction Seminar Series (FieldIn) Jan. 2018 Directed a staff of 16 as co-head of the execution team.
	Rahnema Co. Jul. - Aug. 2017 As a software developer intern, worked on a minimal location-based social network. Participated in iOS and Android applications as well as back-end development.
	Sina Neurosurgical Assist Aug. 2014 Developed an Android application to assist certain brain surgical procedures. The app has been used in various publications by different authors.
RELEVANT COURSEWORK	Machine Learning (graduate, audited), Artificial Intelligence, Linear Algebra, Data Analysis, Probability and Statistics, Design of Algorithms, Data Structures, Discrete Structures
LANGUAGES	<ul style="list-style-type: none"> • Persian: native • English: highly proficient (Common European Framework of Reference C1)
TEST SCORES	<ul style="list-style-type: none"> • TOEFL iBT: 107 (Reading: 27, Listening: 30, Speaking: 25, Writing: 25) • GRE General Test: Verbal: 159, Quantitative: 170, Writing: 4
TECHNICAL SKILLS	<ul style="list-style-type: none"> • General Skills: Java, R, Python, git, \LaTeX • Android and iOS Application Development: React-Native • Website Development: Django, Node.js