Ramazan **Rakhmatullin**

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Education

University of Waterloo *Waterloo, ON, Canada*
MASTER OF MATHEMATICS IN COMBINATORICS AND OPTIMIZATION *January 2023 - April 2025*
- Grade: 95%; Research program under supervision of prof. Kanstantin Pashkovish
- Thesis topic: approximation bound on max-min greedy matching in bipartite graphs

Higher School of Economics *Moscow, Russia*
BACHELOR OF SCIENCE IN APPLIED MATHEMATICS AND COMPUTER SCIENCE *September 2018 - June 2022*
- 3.32/4 GPA
- Major: Machine Learning and Applications

Skills

Fields of interest	LLM Research, Data Analysis
	Discrete Optimization, Operations Research, Algorithms and Data Structures
Programming Languages	C++ (9 years), Python (3 years), Java (2 years)
Other	Pandas, Pytorch, CatBoost, Perf, Docker

Achievements

PERSONAL

Sep. 2018	**IOI Gold Medalist, 11th,** The most prestigious high school algorithmic programming competition	*Tokyo, Japan*
Oct. 2021	**3rd - IMC Coding Challenge,** Discrete optimization competition about market making	*Online*
Feb. 2022	**Winner - Yandex Profi,** Deep Learning competition for university students (5000$ first prize)	*Online*
Aug. 2021	**Winner - VK Cup,** The most prestigious algorithmic programming competition for CIS community	*Online*

TEAM COMPETITIONS

Apr. 2024	**ICPC WF silver medalist, NA champion, 8th,** University of Waterloo team leader and captain	*Luxor, Egypt*
Apr. 2020	**6th - Google Hash Code,** Over 100,000 students and professionals in an optimization competition	*Online*

Work Experience

Huawei Singapore *Singapore*
LLM RESEARCH INTERNSHIP *May 2023 - July 2023*
- Research on improving math reasoning of LLMs, based on generator/verifier idea of this paper

Yandex Delivery *Moscow, Russia*
OPERATIONS RESEARCH / SWE & DATA SCIENCE *July 2022 - December 2022*
- Couriers allocation optimization problem, invented beam search in a novel setting (C++)
- Implementing and enhancing backtesting simulator for data analysis and hypotheses testing (Python)
- Increased main metric (batch rate) by 30%

Russian IOI Team Coach *Moscow, Sochi, Russia*
PROBLEM SETTER AND LECTURER *November 2018 - June 2022*
- Training top high school students from Russia to select and prepare IOI team. Giving lectures, preparing selection problems
- Cummulative team results 2019-2023: 17 gold medals, 3 silver medals

Projects

- **Bachelor's thesis** on fast algorithm for computing maximum matching without crossings in convex bipartite graphs, extending this paper (LIS, self-balancing trees, dynamic programming, tight bounds)
- Implementation of paper on dynamic maximum matching in convex bipartite graphs (matroid theory, bipartite matchings, self-balancing trees, divide and conquer technique)
- Created and conducted hard ICPC-style programming contest problem descriptions/solutions
- SSC 2022 EDA case study
- Member of jury of the Russian National Olympiad in Informatics (2019-2022)
- C++ library implementing and collecting algorithms for Theoretical Computer Science tasks