

# Ramazan Rakhmatullin

✉ [rrakhmat@uwaterloo.ca](mailto:rrakhmat@uwaterloo.ca) | [grumpygordon](#) | Codeforces: [never\\_giveup](#)

## Education

### University of Waterloo

MASTER OF MATHEMATICS IN COMBINATORICS AND OPTIMIZATION

Waterloo, ON, Canada

January 2023 - April 2025

- Grade: 92%; Research program under supervision of prof. [Kanstantin Pashkovish](#)
- Thesis topic: approximation bound on [max-min greedy matching](#) in bipartite graphs

### Higher School of Economics

BACHELOR OF SCIENCE IN APPLIED MATHEMATICS AND COMPUTER SCIENCE

Moscow, Russia

September 2018 - June 2022

- 3.32/4 GPA; Major: Machine Learning and Applications
- Thesis topic: computing maximum matching without crossings in convex bipartite graphs and extensions

## Skills

### Fields of interest

LLM Research, Math Reasoning, Data Analysis

Discrete Optimization, Operations Research, Efficient implementations in C++, Algorithms and Data Structures

### Programming Languages

C++ (9 years), Python (3 years), Java (2 years)

### Other

Pandas, Pytorch, CatBoost, Perf, Bash, 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

LLM RESEARCH INTERNSHIP

Singapore

May 2023 - July 2023

- Research on improving math reasoning of LLMs, based on generator/verifier idea of [this](#) paper

### Yandex Delivery

OPERATIONS RESEARCH / SWE & DATA SCIENCE

Moscow, Russia

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

PROBLEM SETTER AND LECTURER

Moscow, Sochi, Russia

November 2018 - June 2022

- Training top high school students from Russia to select and prepare IOI team. Giving lectures, preparing selection problems
- Cumulative 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