

ALINA ABDIKARIMOVA

4700 KAUST, Thuwal 23955-6900, Saudi Arabia

+966 54 941 9574

alinatanatqyzy@gmail.com

www.linkedin.com/in/alina-abdikarimova

Education

King Abdullah University of Science and Technology (KAUST)

August 2025 - Present

MS in Applied Mathematics and Computational Science (Data Science Track)

Thuwal, Saudi Arabia

Advisor: Prof. Peter Richtárik, Optimization and Machine Learning Lab

GPA: 3.81

Nazarbayev University

August 2021 - June 2025

Bachelor of Science in Mathematics

Astana, Kazakhstan

Awarded Dean's List Academic Recognition for 4 semesters

GPA 3.71

Capstone: *Coordinate Descent for Solving Linear Programs*. Advisor: Prof. Adilet Otemissov

Research Experience

Summer Research Intern

June 2026 – August 2026

CISPA Helmholtz Center for Information Security

Saarbrücken, Germany

- Conducted research on adaptive optimization methods for machine learning under the supervision of Prof. Sebastian Stich and Dr. Slavomír Hanzely.
- Studied Shampoo and related matrix-preconditioned gradient methods, with emphasis on how adaptive preconditioning uses gradient structure to improve optimization.

Undergraduate Research Assistant

September 2023 – June 2025

Nazarbayev University

Astana, Kazakhstan

- Conducted research on linear programming under the supervision of Prof. Adilet Otemissov.
- Studied interior-point methods, coordinate descent, randomized numerical linear algebra, matrix sketching, and iterative solvers for large-scale linear programs.
- Conducted numerical experiments for an unconstrained merit-function approach, analyzed accuracy and convergence across problem dimensions, and produced the plots and numerical results reported in the resulting preprint.

Publications & Preprints

Adilet Otemissov, Alina Abdikarimova. *Solving a Linear Program via a Single Unconstrained Minimization*.

Preprint, arXiv:2505.21232, 2025; under review.

Selected Academic Programs and Travel Support

Applied Mathematics School 2024: Scientific Machine Learning

December 2024

King Abdullah University of Science and Technology

Saudi Arabia

Electrical Engineering Visit Camp Participant

August 2024

Korea Advanced Institute of Science and Technology

Daejeon, South Korea

Selected Leadership and Service

Mereke Charity Fund

August 2024 – Present

Scholarship Recipient and Volunteer

Kazakhstan

- Awarded a merit-based scholarship for academic achievement during the 2024–2025 academic year.
- Supported charitable initiatives for children from large families, including distributing essential supplies and assisting with the selection of winter clothing.

Socio-Educational Project "Kemelden"

March 2023 – January 2024

Founder

- Created 26 self-paced mathematics video lectures and supporting lesson plans to expand access to mathematics resources in Kazakh.
- Built an audience of more than 1,900 subscribers and 60,000 views through content for secondary-school mathematics and national-test preparation.

Nazarbayev University Red Crescent Society

Fall 2021

Volunteer Tutor

- Provided 30 hours of mathematics and English tutoring to a student from a socially vulnerable family.