CV Adilet Otemissov

RESEARCH INTERESTS

Global Optimization; Stochastic Methods for Optimisation; Random Matrices

EDUCATION

DPhil (PhD) in Mathematics 2016–2021
University of Oxford
The Alan Turing Institute, the UK's national institute for data science and AI

- Thesis title: Dimensionality reduction techniques for global optimization (supervised by Dr Coralia Cartis)

MSc in Applied Mathematics with Industrial Modelling 2015–2016
University of Manchester

- Thesis title: Matrix Completion and Euclidean Distance Matrices (supervised by Dr Martin Lotz)

BSc in Mathematics 2011–2015
Nazarbayev University

AWARDS & ACHIEVEMENTS

- SEDA Professional Development Framework Supporting Learning award for successfully completing Developing Learning and Teaching course; more details can be found on `https://www.seda.ac.uk/supporting-learning`, 2020

- The Alan Turing Doctoral Studentship: highly competitive full PhD funding, providing also a vibrant interdisciplinary research environment at the Institute in London, as well as extensive training in the state-of-the-art data science subjects from world's leading researchers, 2016–2020

- NAG MSc student prize in Applied Mathematics with Industrial Modelling for achieving the highest overall mark in the numerical analysis course units in my cohort at the University of Manchester, 2016

PUBLICATIONS

- C. Cartis, E. Massart, and **A. Otemissov**. Applications of conic integral geometry in global optimization. 2021. Research completed, in preparation

- C. Cartis, E. Massart, and **A. Otemissov**. Constrained global optimization of functions with low effective dimensionality using multiple random embeddings. *ArXiv e-prints*, page arXiv:2009.10446, 2020. Manuscript (41 pages) submitted for publication in Mathematical Programming. Got back from the first round of reviewing

- C. Cartis and **A. Otemissov**. A dimensionality reduction technique for unconstrained global optimization of functions with low effective dimensionality. *Information and Inference: A Journal of the IMA*, 2021. iaab011

- X. Fan, **A. Otemissov**, F. Sica, and A. Sidorenko. Multiple point compression on elliptic curves. *Designs, Codes and Cryptography*, 83(3):565–588, 2017

- D. Wei, M. Fyrillas, **A. Otemissov**, and R. Bekishev. Optimal design of helical springs of power law materials. *ArXiv e-prints*, page arXiv:1610.09155, 2016

CONFERENCE TALKS AND ATTENDANCE

31st European Conference on Operational Jul 2021
Athens, Greece online presentation

37th International Conference on Machine Learning Jul 2020
online workshop paper

17th EUROPT Workshop on Advances in Continuous Optimization Jun 2019
Glasgow, Scotland presentation

28th Biennial Numerical Analysis Conference Jun 2019
Glasgow, Scotland presentation

36th International Conference on Machine Learning Jun 2019
Long Beach, California attendance

23rd International Symposium on Mathematical Programming Jul 2018
Bordeaux, France presentation

6th IMA Conference on Numerical LA and Optimization Jun 2018
Birmingham, England presentation

SIAM Conference on Optimization May 2017
Vancouver, Canada presentation

SEMINAR TALKS

Numerical Analysis Group internal seminar (30 min.) Jan 2020, Jun 2018
Mathematical Institute, University of Oxford May 2017

Junior Applied Maths Seminar (30 min.) Nov 2019
Mathematical Institute, University of Oxford

Theory and Algorithms in Data Science seminar (60 min.) Nov 2017
The Alan Turing Institute, London

LEADERSHIP AND INDUSTRY INTERACTIONS

A founding member of Turing optimization research club

Have organized and conducted optimization seminar talks at the Alan Turing Institute since Oct 2017. List of talks available at `https://turing-optimization.github.io`

Participant of the 145th European Study Group with Industry

Worked on an industrial project as part of the week-long study group at the Centre for Mathematical Sciences, University of Cambridge, Apr 2019

A founding member and president of Maths Club

Organized various maths-related events including weekly meetings, problem-solving classes to prepare for international maths competitions, math battles and guest lectures at Nazarbayev Univeristy, 2011-2015

TEACHING AND WORK EXPERIENCE

Research Assistant:

Responsibilities include creating software codes (to be made public) of the global optimization algorithms developed during my DPhil, Apr – Jun 2020; supervised by Dr Coralia Cartis

Tutor in:

Continuous Optimization (Spring, Summer 2019; Spring 2020, Oxford)
Integer Programming (Fall 2019, Oxford)

TA in:

Continuous Optimization (Spring 2018, Oxford)
Graph Theory (Fall 2018, Oxford)
Linear Algebra (Summer 2014, Nazarbayev University)

SKILLS

Software

MATLAB (experienced), LaTeX (experienced), Python (basic), C++ (basic), R (basic); experienced with various optimization solvers: BARON, KNITRO, DIRECT

Languages

Kazakh, Russian, English

DOCTORAL TRAINING RECEIVED

Courses attended in Oxford:

Numerical Linear Algebra (16 hrs.), Analytic Number Theory (16 hrs.), Probabilistic Combinatorics (16 hrs.)

Classes attended in the Alan Turing Institute:

Introduction to machine learning (6 hrs.), Mathematical representations and models (3 hrs.), Optimization (3 hrs.), Ecological/Environmental, social and urban data science (5 hrs.), Computer programming (4 hrs.), Ethics in data science and Privacy (3 hrs.), Tools for big data (9 hrs.), Information Visualization (3 hrs.), Monte Carlo methods (3 hrs.)

Workshops attended:

Face your fears and deal with them (Oxford, 7.5 hrs.), Developing Learning and Teaching (Oxford, 9 hrs.), Research Skills Toolkit (Oxford, 2 hrs.), Tutors and Class assistants (Oxford, 3.5 hrs.), The tricks of the trade, how to do research (The Alan Turing Institute, 3 hrs.)