

## OLGA KUZNETSOVA

[www.okuznetsova.com](http://www.okuznetsova.com)

### EDUCATION

- 08.2019 – 07.2023 **Aalto University School of Science, Helsinki, Finland**  
*PhD Candidate in Mathematics and Statistics*
- Topic: Non-linear optimisation: certification of optimality using algebraic methods
  - Advisor: Prof. Kaie Kubjas
  - Theoretical studies completed
  - Teaching: Calculus I&II, Foundations of Discrete Mathematics, Algebraic Statistics (Master's)
- 08.2017 – 06.2019 **Aalto University School of Science, Helsinki, Finland**  
*MSc in Mathematics and Operations Research (with distinction)*
- 01-08.2017 Pre-degree coursework in mathematical methods, abstract algebra, analysis and topology
  - GPA: 4.8/5.0,
  - Thesis "Private Information Retrieval: Combinatorics of the Star-Product Scheme" – grade 5.0/5.0. Supervisor – Prof. Camilla Hollanti, advisor – Dr. Ragnar Freij-Hollanti
- 10.2015 – 12.2016 **London Business School, London, UK**  
*Graduate Coursework in Management Science and Operations*
- Coursework: stochastic modelling, optimisation, econometrics, microeconomics
  - Full scholarship
- 03.2009 – 07.2011 **Aalto University School of Business, Helsinki, Finland**  
*MSc in Information and Service Management*
- Thesis "Tax Return Filing Online – Case Finnish Tax Administration" – grade 4.0/5.0. Supervisor – Dr. Esko Penttinen, Research Manager, Aalto University Service Factory
  - GPA 4.0/5.0
- 08.2010 - 07.2011 **Aalto University School of Business, Helsinki, Finland and University of Cologne, Cologne, Germany**  
*CEMS Masters in International Management*
- Business project "IT Sourcing and Organization Study" in co-operation with Accenture GmbH. Supervisor – Professor Thorsten Semrau, University of Cologne
  - Outstanding Achievement Award from University of Cologne, given to the top 10% of the total exchange student population
  - GPA 4.5/5
- 09.2007 - 05.2010 **Aalto University School of Business, Helsinki, Finland**  
*BSc in Business Technology*
- Thesis "E-government: E-Government development models evolution" – grade 5.0/5.0
  - GPA 3.8/5.0
  - Winner of student assistant grant 2009-2010 from the Department of Business Technology worth 1000 EUR
- 09.2005 - 06.2007 **Kyiv National Economic University, Kyiv, Ukraine**  
*Business Studies*

### PUBLICATIONS PUBLISHED

1. **Information Hiding Using Matroid Theory.** With Ragnar Freij-Hollanti [Advances in Applied Mathematics: 129](#)

## SUBMITTED

1. **Algebraic degree of optimization over a variety with an application to p-norm distance degree.** With Kaie Kubjas and Luca Sodomaco [arXiv:2105.07785](https://arxiv.org/abs/2105.07785)
2. **Computing Maximum Likelihood Estimates for Gaussian Graphical Models with Macaulay2.** With Carlos Amendola, Luis David García-Puente, Roser Homs, Harshit J. Motwani [arXiv:2012.11572](https://arxiv.org/abs/2012.11572)
3. **Exact Solutions in Log-Concave Maximum Likelihood Estimation.** With Alexandros Grosdos, Alexander Heaton, Kaie Kubjas, Georgy Scholten, Miruna-Stefana Sorea *Submitted* [arXiv:2003.04840](https://arxiv.org/abs/2003.04840)

## ACADEMIC CONFERENCES

### INVITED TALKS

- 2021 SIAM Conference on Applied Algebraic Geometry 2021. Minisymposium “Algebraic Geometry of Data” (online– August 2021)
- 2020 28th Nordic Congress of Mathematicians. Session “Applied Algebra” (Helsinki, Finland – August 2020 *postponed due to COVID19*)

### CONTRIBUTED TALKS

- 2021 SIAM Conference on Applied Algebraic Geometry 2021. Contributed Presentations Session “Applied Algebraic Geometry III” (online – August 2021). Talk  
EMS/EWM Mittag Leffler virtual school “Tropical moduli spaces” (online – July 2021). Talk  
MEGA 2021: Effective Methods in Algebraic Geometry (online – June 2021). Second place poster award
- 2020 Workshop “Geometry of curves in time series and shape analysis” (online, organized by Max Planck Institute for Mathematics in the Sciences, Leipzig, August 2020). Poster
- 2019 Summer School on Geometric and Algebraic Combinatorics (Paris, France, June 2019). Poster
- 2018 Number theory and coding theory: Contemporary applications in security (Turku, Finland – May 2018). Talk  
ECCO 2018: The Colombian Meeting on Combinatorics (Barranquilla, Colombia – June, 2018). Talk  
Summer School on Numerical Computing in Algebraic Geometry (Leipzig, Germany – August, 2018). Poster  
Summer School in Algebraic Statistics (Tromso, Norway – September 2018). Talk

### ATTENDANCE

- 2020 Macaulay2 Workshop (online, May, 2020)
- 2019 SIAM Conference on Applied Algebraic Geometry 2019 (Bern, Switzerland) – Received SIAM Student Travel Award
- 2018 Munich Workshop on Coding and Cryptography 2018 (Munich, Germany - April 2018)  
ASGARD Math 2018: Real Algebraic Geometry and Tropical Mathematics (Oslo, Norway - May, 2018)  
Nordfjordeid Summer School 2018: Combinatorics and Hodge Theory (Nordfjordeid, Norway – June, 2018)  
Young Topologists Meeting 2018 (Copenhagen, Denmark – July, 2018)
- 2017 Connections for Women Workshop: Geometric and Topological Combinatorics (Mathematical Sciences Research Institute, Berkeley, CA)
- 2016 Trans-Atlantic Doctoral Conference (London Business School)

## SERVICE

- Member of the Standing Committee of the European Women in Mathematics
- Website (manage a team of 4 volunteers and relations with developers)
  - Fundraising
  - Strategy review

## IT SKILLS

Git, Macaulay2, Mathematica, MATLAB, Maple, R, Stata

## WORK EXPERIENCE

06.2017 - 08.2017

**AALTO UNIVERSITY SCHOOL OF SCIENCE**  
Research Assistant

**Finland/UK**

01.2014 – 09.2015	<b>SELF-EMPLOYED</b> Entrepreneur/ Management Consultant	<b>Finland/UK/Ukraine</b>
10.2011 – 01.2014	<b>MCKINSEY &amp; CO</b> Management Consultant	<b>Finland</b>
09.2009 – 08.2010	<b>FINNISH TAX ADMINISTRATION</b> Researcher	<b>Finland</b>
06.2008 – 12.2008	<b>SYNOCUS OY</b> Project Assistant	<b>Finland</b>

#### **LANGUAGES**

Russian (native), English (fluent), Finnish (fluent), Spanish (upper-intermediate)