

Curriculum Vitae of Arina Voorhaar (Arkhipova)

CONTACT INFORMATION

Office 04-2-07,
Department of Mathematical Sciences
Universitetspark, 5
2100 Copenhagen Ø Denmark
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EDUCATION

Docteur ès sciences mention mathématiques

(PhD) [Université de Genève](#)

10/2017 – 09/2022. Geneva, Switzerland

Thesis: “*On the Newton polytope
of the Morse discriminant*”

Advisor: Anton Alekseev

Кандидат математических наук (PhD)

[HSE University](#)

11/2017 – 09/2022. Moscow, Russia

Thesis: “*Newton polytopes, sparse resultants
and enumeration of singularities*”

Advisor: Alexander Esterov

MSc. in Mathematics [Université de Genève](#),

2016 – 2017. Geneva, Switzerland

Master Class in Geometry, Topology and Physics

Thesis: “*Topological Invariants of Projections
and Newton Polytopes*”

Advisors: Grigory Mikhalkin and Alexander Esterov

B.Sc. in Mathematics [HSE University](#),

2012 – 2016. Moscow, Russia

graduated with honors

Thesis: “*Signs of The Leading Coefficients
of The Resultant*”

Advisor: Alexander Esterov

High school [School #179 of MIOE](#),

2009 – 2012. Moscow, Russia

*specialized in Mathematics,
graduated summa cum laude*

RESEARCH INTERESTS

- Enumerative and combinatorial algebraic geometry
- Tropical and convex geometry
- Singularity theory
- Toric geometry and Newton polyhedra
- Elimination theory

PERSONAL DETAILS

Date and place of birth: January 25, 1995,

Moscow, Russian Federation

Citizenship: Dutch, Russian

Marital status: Married

POSITIONS HELD

Postdoctoral researcher

[Department of Mathematical Sciences, University of
Copenhagen](#)

10/2022 – present. Copenhagen, Denmark.

Associate Member of the Research Team

[International Laboratory of Cluster Geometry, HSE
University](#)

02/2021 – present. Moscow, Russia.

Research intern

[Laboratory of Algebraic Geometry and its Applica-
tions, HSE University](#)

03/2016 – 07/2016. Moscow, Russia.

RESEARCH PROJECTS

Participant [HSE 16-01-0069](#)

2016 – 2017. Moscow, Russia.

Topic: “*Algebro-geometric applications of invariants
of lattice polytopes modulo a prime number*”

PUBLICATIONS & PREPRINTS

2017 *Signs of the Leading Coefficients
of the Resultant*

Published in: Journal of Geometric and Functional
Analysis (GAFA)

Joint with: Alexander Esterov

2022 *On the Singular Locus of a Plane Projection
of a Complete Intersection*

Published in: Mathematische Zeitschrift

2023 *The Newton Polytope of the Morse
Discriminant of a Univariate Polynomial*

Published in: Advances in Mathematics

2023 *Sparse curve singularities, singular loci
of resultants, and Vandermonde matrices*
Preprint. arXiv:2301.07001 [math.AG]
Joint with: Alexander Esterov, Evgeny Statnik

LANGUAGES

- Russian (Native)
- English (fluent / C2)
- French (fluent / C1)
- Dutch (intermediate / B1)

TEACHING EXPERIENCE

Teaching Assistant	Fall 2022
Course: “Invitation to Combinatorics”, Instructor: Karim Adiprasito University of Copenhagen, Copenhagen, Denmark	
Teaching Assistant	Spring 2022
Course: “Mathématiques pour Informaticiens”, Instructor: Paul Turner Université de Genève, Geneva, Switzerland	
Teaching Assistant	Fall 2021
Course: “Mathématiques Générales”, Instructor: Pierre-Alain Cherix Université de Genève, Geneva, Switzerland	
Teaching Assistant	Fall 2021
Course: “Algèbre I”, Instructor: Bart Vandereycken Université de Genève, Geneva, Switzerland	
Teaching Assistant	Spring 2021
Course: “Laboratoire de Programmation Mathématique”, Instructor: Nicolas Orantin Université de Genève, Geneva, Switzerland	
Teaching Assistant	Fall 2020
Course: “Algèbre I”, Instructor: Bart Vandereycken Université de Genève, Geneva, Switzerland	
Teaching Assistant	Spring 2020
Course: “Travaux Pratiques Algèbre/Analyse” , Instructor: David Cimasoni Université de Genève, Geneva, Switzerland	
Teaching Assistant	Fall 2019
Course: “Algèbre I”, Instructor: Bart Vandereycken Université de Genève, Geneva, Switzerland	

Teaching Assistant	Fall 2018
Course: “Travaux Pratiques Algèbre/Analyse”,	
Instructor: David Cimasoni	
Université de Genève, Geneva, Switzerland	
Teaching Assistant	Spring 2018
Course: “Homologie et Cohomologie”,	
Instructor: Samuel Monnier	
Université de Genève, Geneva, Switzerland	
Teaching Assistant	Fall 2015–Spring 2016
Course: “Basic Notions of Calculus” , Instructor: Marachev A.A.	
school #179 MIOE, Moscow, Russia	
Teaching Assistant	Fall 2015
Course: “Introduction to Probability Theory” ,	
Instructor: Klimenko A.V.	
NRU HSE, Moscow, Russia	
Teaching Assistant	Spring 2015
Course: “Introduction to Discrete Mathematics”	
Instructor: Feigin E.B.	
NRU HSE, Moscow, Russia	
Teaching Assistant	Fall 2014
Course: “Dynamical Systems”,	
Instructor: Esterov A.I.	
NRU HSE, Moscow, Russia	
Teaching Assistant	Fall 2013
Course: “Logic and Algorithms”	
Instructors: Beklemishev L.D., Shehtman V.B.	
NRU HSE, Moscow, Russia	

PARTICIPATION IN CONFERENCES & SUMMER SCHOOLS

• Göran Gustafsson-symposium	
Stockholm, Sweden	May-Jun 2022
• Tropical Geometry and Singularities	
Lille, France	Sep 2021
• SwissMAP General Meeting – 2021	
Les Diablerets, Switzerland	Sep 2021
• GQT Graduate School and Colloquium – 2019	
Den Dolder, the Netherlands	Jul 2019
• Helvetic Algebraic Geometry Seminar – 2019	
Konolfingen, Switzerland	Jun 2019

- Winter School in Mathematical Physics – 2019
Les Diablerets, Switzerland Jan 2019
- Higher Algebra and Mathematical Physics
Bonn, Germany Aug 2018
- 2nd Budapest Workshop on Characteristic Classes of Singularities
Budapest, Hungary Aug 2018
- CIME School “Geometric Representation Theory and Gauge Theory”
Cetraro, Italy Jun 2018
- Helvetic Algebraic Geometry Seminar – 2018
Konolfingen, Switzerland Jun 2018
- Winter School in Mathematical Physics – 2018
Les Diablerets, Switzerland Jan 2018
- Galois Meets Newton: Algebraic and
Geometric aspects of Singularity Theory
Weizmann Institute of Science, Rehovot, Israel Jul 2017
- Women in Geometry and Topology
ETH Zürich, Switzerland Jun 2017
- Winter School in Mathematical Physics – 2017
Les Diablerets, Switzerland Jan 2017
- Summer School on Algebra, Statistics and Combinatorics
Aalto University, Helsinki, Finland Jun-Jul 2016
- Transversal Aspects of Tilings
island Oléron, France May-Jun 2016
- Scuola Matematica Interuniversitaria,
Perugia, Italy Jul–Aug 2015
- Modern Mathematics International Summer School for Students
(MoMISSS), Lyon, France Aug 2014
- Summer school “Contemporary Mathematics”,
Dubna, Russia Jul 2014
- XIII school-conference in Maths and Physics,
(HSE-ITEP(Moscow)-ITP(Kiev)), Dubna, Russia May 2014
- Summer school “Contemporary Mathematics”,
Dubna, Russia Jul 2013