Yulia Alexandr

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Research interests

combinatorics, algebraic geometry, applied algebra

Education

University of California, Berkeley 2019–present
PhD in Mathematics

Wesleyan University Class of 2019
BA in Mathematics with High Honors
Advisor: Karen Collins
Thesis: *Combinatorial Nullstellensatz: Various Proofs, Extensions & Applications*

Awards and fellowships

NSF Graduate Research Fellowship 2020
Chancellor's Graduate Fellowship (UC Berkeley) 2019
Phi Beta Kappa (Connecticut Gamma Chapter) 2019
Rice Prize (Wesleyan University) 2019
awarded to a senior for excellence in mathematics
Rae Shortt Prize (Wesleyan University) 2018
awarded to a junior for excellence in mathematics

Publications

Logarithmic Voronoi cells
with Alexander Heaton.
To appear in *Algebraic Statistics, 2020.*

Computing a logarithmic Voronoi cell
with Alexander Heaton and Sascha Timme.
Published online at *HomotopyContinuation.jl, 2019.*

Recovering Conductances of Resistor Networks in a Punctured Disk
with Brian Burks, Sunita Chepuri, and Patricia Commins.
Submitted, but available on *arXiv, 2019.*

Deformations of the Weyl Character Formula for $SO(2n+1,\mathbb{C})$ via Ice Models
with P. Commins, A. Embry, S. Frank, Y. Li, and A. Vetter.
Available on *arXiv, 2018.*

Growth of Meandric Numbers
with Kayla Cummings and Edgar Jaramillo Rodriguez.
Transcription in *DIMACS-DIMATIA REU booklet (pp. 33-36), 2017.*

Teaching

Teaching assistant (Wesleyan University) Fall 2018
MATH 231: Probability Theory
Instructor: Han Li

Teaching assistant (Wesleyan University) Spring 2018
MATH 274: Graph Theory
Instructor: Karen Collins

Teaching assistant (Wesleyan University) Fall 2017
MATH 231: Probability Theory
Instructor: Felipe Ramírez

Talks

Logarithmic Voronoi Cells April 2020
Nonlinear Algebra Seminar Online

Ice Models for Types A and B (two talks) October 2019
Berkeley Combinatorics Reading Seminar

Linear Spaces and Grassmannians June 2019
Max Planck Institute for Mathematics in the Sciences (Leipzig, Germany)

Combinatorial Nullstellensatz January 2019
Wesleyan University Thesis Defense

Visibility Graphs of Staircase Polygons April 2018
Berkeley Undergraduate Number Theory Conference

Skills

Programming
Macaulay2, SAGE, C, C++, LaTeX, OCaml, SML, HTML, Python.

Languages
English (fluent), Russian (native), Hebrew (intermediate)

Service and outreach

Noetherian Ring, member, *UC Berkeley* 2019–present
Math Club graduate school panel, panelist, *Wesleyan University* 2020
Directed reading program (DRP), mentor, *UC Berkeley* 2020
Unbounded Representation (URep), officer, *UC Berkeley* 2019–2020