Ahmad Mokhtar - CV

Graduate Student & Sessional Instructor
Department of Mathematics
Simon Fraser University, Canada

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Education

Ph.D. in Mathematics, Simon Fraser University, Canada (2020-current)
Field: Algebraic Geometry
Supervisor: Dr. Nathan Ilten

M.Sc. in Mathematics, Simon Fraser University, Canada (2018-2020)
Field: Algebraic Geometry
M.Sc. Thesis: Toric degenerations of rational curves of degree $n+2$ in $\mathbb{P}^n$
Supervisor: Dr. Nathan Ilten

M.Sc. in Mathematics, Shiraz University, Shiraz, Iran (2016-2018)
Field: Coding Theory
Supervisor: Dr. Shohreh Namazi

B.Sc. in Electrical Engineering, Shiraz University, Shiraz, Iran (2007-2011)
Field: Telecommunications

Interests

Algebraic geometry, Fano schemes, Toric degenerations, Computational algebraic geometry

Honors

The certificate "With Distinction" for Master's thesis (Simon Fraser University)
First rank in GPA in B.Sc (among co-entry students, Shiraz University)
First rank in GPA in M.Sc (among co-entry students, Shiraz University)
21st rank in Iran's National University Entrance Exam for Graduate Studies in Math (2014)
18th rank in Iran's National Olympiad in Electrical Engineering (2010)
First rank in Iran's National Programming Contest for high school students (2006)

Awards

SFU Graduate Dean's Entrance Scholarship: $84,000 (2018-2022)
PhD Research Scholarship: $5,400 (2023-2024)

Teaching

Instructor:
Calculus 3 (Math 251), Simon Fraser University, Canada (Spring 2023)
Calculus, Geometry, Algebra & Probability
Im. Hossein High School, Hormozgan, Iran (2014-2016)
Al Zahra High School, Hormozgan, Iran (2014-2016)

Teaching Assistant:
Calculus Workshop, Fall 2021–23, Simon Fraser University
Galois Theory, Spring 2021
Algebra Workshop, Fall 2020
Commutative Algebra and Algebraic Geometry, Spring 2020
Applied Calculus Workshop, Spring 2019
General Topology, Fall 2017, Shiraz University, Iran

Publication

A. Mokhtar. Fano schemes of symmetric matrices of bounded rank. *arXiv:2310.07025*. (2023).

N. Ilten, A. Mokhtar. Khovanskii-finite rational curves of arithmetic genus 2. *Michigan Math. J.* **73** (2023), no. 5, 1059–1082.

B. Ahmadi, M. H. Shirdareh Haghighi, A. Mokhtar. Perfect quantum state transfer on the Johnson scheme. *Linear Algebra and its Applications*. **584**, 326–342 (2020).

Talks

Khovanskii-finite rational curves of arithmetic genus 2, SIAM Conference on Applied Algebraic Geometry (AG23), Eindhoven University of Technology, Jul 2023

Fano schemes of singular symmetric matrices, University of British Columbia AG seminar, Mar 2023

Fano schemes of singular symmetric matrices, Simon Fraser University NTAG seminar, Feb 2023

Intro to moduli spaces through Grassmannians and Fano schemes, SFU gradieNTAG seminar, Jan 2023

Fano schemes of singular symmetric matrices (short talk), Banff International Research Station, Dec 2022

Toric degenerations of quintic rational space curves, Simon Fraser University NTAG seminar, Jan 2020

Toric degenerations of quintic rational space curves, 2nd Biennial Meeting of SIAM Pacific Northwest Section, Seattle University, Oct 2019 (canceled due to visa issues)

Services

Co-organizer of the SFU graduate seminar in algebraic geometry (gradieNTAG), since 2023, Simon Fraser University, Canada

Co-organizer of the 5-minute talk session in the *Toric Degenerations* workshop, Dec 2022, Banff International Research Station (BIRS), Canada

Organizer, Problem solving workshop (part of Simons Semester), Fall 2018, Banach Center, Warsaw, Poland

Volunteer tutor at *Native Education College*, Summer 2022, Vancouver, Canada

Tutor, SFU Academics First (tutoring services for athletes), 2022, Canada

Steward in the Teaching Support Staff Union (TSSU), 2019–2023, Canada

Skills

Programming in C/C++, Java, Macaulay2, Magma, Maple, MATLAB

Languages

Persian (native), English, French