

Negin Shadgar

PhD Student in Mathematics

University of British Columbia

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Research Interests

Arithmetic dynamics and arithmetic geometry, with particular interests in orbit-collision problems, unlikely intersections, and dynamical systems varying in algebraic families.

Education

PhD in Mathematics, University of British Columbia 2025–present
Thesis: *Collision of Orbits in Arithmetic Dynamics* (in progress). Advisor: [Dragoş Ghioca](#).

MSc in Mathematics, University of British Columbia 2023–2025
Graduate essay: *Orbital Integrals and Class Number*. Advisor: [Julia Gordon](#).

BSc in Mathematics and Applications, University of Tehran 2019–2023
Undergraduate essay: *Primes of the Form $x^2 + ny^2$* . Advisor: [Amir Ghadermarzi](#).

Research Papers and Work in Progress

- [1] **Collision of Orbits on an Elliptic Surface** with [Dragoş Ghioca](#).
Bulletin of the Australian Mathematical Society, 2026. DOI | [arXiv:2602.10383](#)
- [2] **Collision of Orbits for Families of Polynomials Defined over Number Fields** with [Dragoş Ghioca](#).
Submitted for publication, 2026. [arXiv:2607.26044](#)
- [3] **Collision Parameters in Higher-Dimensional Families of Polynomials** with [Dragoş Ghioca](#).
Work in progress, 2026.

Conferences, Workshops & Summer Schools

Séminaire de Mathématiques Supérieures 2026: *Universal Statistics in Number Theory* May 2026
Centre de recherches mathématiques (CRM), Montréal, Québec.

Teaching Experience

Graduate Teaching Assistant, University of British Columbia 2023–present
Graduate courses: MATH 423/502; MATH 422/501.

Undergraduate courses: MATH 312; MATH 220; MATH 221; MATH 200; MATH 180; MATH 100/101.

Additional roles: [Mathematics Learning Centre](#) tutor and Teaching Assistant in Charge.

Volunteer Co-Instructor, University of British Columbia August 2026
Rational Points on Elliptic Curves, UBC Mathematics Summer Reading Program.

Co-designed and taught an undergraduate short course on the geometric group law, rational points, and the Nagell–Lutz theorem; prepared lecture notes, exercises, and in-class activities.

Undergraduate Teaching Assistant, University of Tehran
Elementary Number Theory; Linear Optimization I; Algebra II.

2022–2023

Selected Talks

Primes of the Form $x^2 + ny^2$, University of Tehran

Spring 2023

Seminar Organization & Academic Service

Co-organizer, UBC Number Theory Seminar, University of British Columbia

Fall
2026–present

Graduate Marking Assistant, **Canadian Open Mathematics Challenge**, Canadian Mathematical Society

2023, 2024