

Full Name: Makadiya Deepkumar Hasamukhbhai

Date of Birth: 25 July 1997

Nationality: Indian

Current Affiliation: Bar-Ilan University, Ramat-Gan, Israel

Office Address: Room 011, Department of Mathematics (Building 216),
Bar-Ilan University, Ramat-Gan, 5290002, Israel.

Email Address: deepmakadia25.dm@gmail.com

Webpage: <https://deepmakadiya25.github.io>

Professional Profiles: [ArXiv](#) | [Orcid](#) | [Research Gate](#) | [Google Scholar](#) | [Linked-in](#)

RESEARCH INTERESTS

My primary research interests lie in group theory and representation theory. I particularly focus on the structural theory of Chevalley and twisted Chevalley groups, while also having a broader interest in algebraic groups, Lie groups, and Lie algebras.

EDUCATION

Doctor of Philosophy - Ph.D. (Mathematics)

Indian Institute of Technology Bombay

Thesis Title: Some Properties of Twisted Chevalley Groups

Thesis Advisor: Prof. Shripad M. Garge

January 2020 - May 2025

Mumbai, Maharashtra, India

Master of Science - M.Sc. (Mathematics)

Indian Institute of Technology Bombay

July 2017 - May 2019

Mumbai, Maharashtra, India

Bachelor of Science - B.Sc. (Mathematics)

The Maharaja Sayajirao University of Baroda

June 2014 - April 2017

Vadodara, Gujarat, India

CURRENT POSITIONS

Postdoctoral Fellow

Department of Mathematics, Bar-Ilan University

Mentor: Prof. Elena I. Bunina

1st October 2025 - present

Ramat-Gan, Israel

PAST POSITIONS

Research Associate

Department of Mathematics, IIT Bombay

Mentor: Prof. Shripad M. Garge

8th January 2025 - 28th May 2025

Mumbai, Maharashtra, India

Visiting Researcher

Harish-Chandra Research Institute (HRI)

Host: Prof. Manoj Kumar Yadav

July 2025 - September 2025

Prayagraj, Uttar Pradesh, India

AWARDS, GRANTS AND OTHER ACADEMIC ACHIEVEMENTS

Honours, Awards and Grants

- Awarded a Teaching Assistantship (TA) at IIT Bombay

Other Academic Achievements

- Secured **AIR 10 (out of 10834)** in the **IIT-JAM (Mathematics)** Examination for M.Sc. Entrance – 2017
- Cleared the **NET/JRF** examination with All India **JRF Rank 53** (on my first attempt, in my first semester of M.Sc.) – 2017
- Cleared the **NET/JRF** examination (a second time), with All India **JRF Rank 67** – 2018
- Cleared the **NET/JRF** examination (a third time), with All India **JRF Rank 19** – 2019
- Qualified the **GATE** examination on my first attempt – 2019
- Secured **Rank 1** in the **MS University** Entrance Examination for M.Sc. Mathematics – 2017
- Secured **Rank 4 (Gujarat State)** in the Madhava Mathematics Competition – 2017

PUBLICATIONS AND PREPRINTS

- (1) Shripad M. Garge and Deep H. Makadiya, *On normal subgroups of twisted Chevalley groups over commutative rings*, Journal of Algebra, Vol. 688 (2026), pp. 587–659.
- (2) Shripad M. Garge and Deep H. Makadiya, *Normalizer of twisted Chevalley groups over commutative rings*, Journal of Pure and Applied Algebra, Vol. 229, No. 11 (2025), Paper No. 108094.
- (3) Shripad M. Garge and Deep H. Makadiya, *Triangular and unitriangular factorization of twisted Chevalley groups*, to appear in Israel Journal of Mathematics (2025), arXiv link: [arXiv.2505.20224](https://arxiv.org/abs/2505.20224).
- (4) Elena I. Bunina and Deep H. Makadiya, *Automorphisms of twisted Chevalley groups of type ${}^2A_\ell$ ($\ell \geq 5$) over local rings*, submitted, arXiv link: [arXiv.2607.22284](https://arxiv.org/abs/2607.22284).
- (5) Elena I. Bunina and Deep H. Makadiya, *Automorphisms of twisted Chevalley groups of type 2A_3 and 2A_4 over local rings*, submitted, arXiv link: [arXiv.2609.02617](https://arxiv.org/abs/2609.02617).
- (6) Elena I. Bunina and Deep H. Makadiya, *Automorphisms of twisted Chevalley groups of type ${}^2D_\ell$ ($\ell \geq 4$) over local rings*, submitted, arXiv link: [arXiv.2608.02312](https://arxiv.org/abs/2608.02312).
- (7) Elena I. Bunina and Deep H. Makadiya, *Automorphisms of twisted Chevalley groups of type 2E_6 over local rings*, in preparation.
- (8) Elena I. Bunina and Deep H. Makadiya, *Automorphisms of twisted Chevalley groups of type 3D_4 over local rings*, in preparation.
- (9) Elena I. Bunina and Deep H. Makadiya, *Automorphisms of twisted Chevalley groups over commutative rings*, in preparation.

TEACHING EXPERIENCE

Teaching Assistantship at IIT Bombay

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|--|--------------------------------|
| (1) MA 111 : Calculus 2 | Autumn 2020-21 (Second Half) |
| Taught by Prof. Rekha Santhanam and Prof. Debanjana Mitra | |
| (2) MA 106 : Linear Algebra | Spring 2020-21 (First Half) |
| Taught by Prof. Shudhir Ghorpade and Prof. Dipendra Prasad | |
| (3) MA 108 : Differential Equations | Spring 2020-21 (Second Half) |
| Taught by Prof. Prachi Mahajan and Prof. U. K. Anandavardhanan | |
| (4) MA 109 : Calculus 1 | Autumn 2021-22 (First Half) |
| Taught by Prof. Sourav Pal and Prof. Mayukh Mukherjee | |
| (5) MA 111 : Calculus 2 | Autumn 2021-22 (Second Half) |
| Taught by Prof. Bata K Das and Prof. Saurav Bhaumik | |
| (6) MA 106 : Linear Algebra | Spring 2021-22 (First Half) |
| Taught by Prof. G K Srinivasan and Prof. S Sivasubramanian | |
| (7) MA 108 : Differential Equations | Spring 2021-22 (Second Half) |
| Taught by Prof. Suresh Kumar and Prof. Santanu Dey | |
| (8) MA 419 : Basic Algebra | Autumn 2022-23 (Full Semester) |
| Taught by Prof. Jugal K Verma | |
| (9) MA 414 : Algebra 1 | Spring 2022-23 (Full Semester) |
| Taught by Prof. Ronnie M Sebastian | |
| (10) MA 419 : Basic Algebra | Autumn 2023-24 (Full Semester) |

Taught by Prof. Tony J Puthenpurakal

Pooja Coaching Institute, Vadodara

- (1) Mathematics Tutor for IIT JAM and CSIR-UGC NET/JRF Aspirants July 2019 - January 2020

TALKS

Conferences & Workshop Talks

- (1) “Automorphisms of Chevalley Groups,” contributed talk, “Groups and Representations,” IIT Bombay, Mumbai, 5 July 2023.
- (2) “On Normal Subgroups of Twisted Chevalley Groups over Commutative Rings,” poster presentation, “Representations of Groups and Algebras,” IMSc, Chennai, 3–5 February 2025.
- (3) “Automorphisms of Twisted Chevalley Groups,” invited talk, “Algebraic Geometry and Model Theory of Groups and Rings IV,” Tbilisi, Georgia, 27 August 2026.

Seminar & Colloquium Talks

- (1) Seminar on “Triangular and Unitriangular Factorizations of $SL_n(R)$ and $SU_n(R)$,” Harish-Chandra Research Institute, 22 July 2025.
- (2) Seminar on “Triangular and Unitriangular Factorizations of $SL_n(R)$ and $SU_n(R)$,” IIT Bombay, 22 August 2025.
- (3) Seminar on “Triangular and Unitriangular Factorizations of $SL_n(R)$ and $SU_n(R)$,” Bar-Ilan University, 29 April 2026.

Reading & Learning Seminars

- (1) Gave a seminar on “Representation theory of $SL_2(\mathbb{C})$,” student seminar at IIT Bombay, 8 March 2023.
- (2) Seminars based on Steinberg’s famous paper “Regular elements of semi-simple algebraic groups,” 2023.
- (3) Seminars based on the book “Linear Algebraic Groups” by T. A. Springer, 2023 to 2024.
- (4) Gave a seminar on “Automorphism of local rings which fixes the maximal ideal,” student seminar at IIT Bombay, 8 February 2024.
- (5) Gave two seminars on “Generator relation presentation of the group $SL_n(\mathbb{C})$ and Steinberg groups,” student seminar at IIT Bombay, 9 and 16 March 2024.
- (6) Seminars based on the book “Nilpotent Orbits of Lie algebras” by D. H. Collingwood and W. M. McGovern, 2024.
- (7) Seminars based on the book “Spherical functions on a group of p -adic type” by I. G. Macdonald, 2025.

CONFERENCE & WORKSHOP PARTICIPATION

- (1) Workshop on “Problem Solving & Enrichment in Mathematics” held at St. Xavier’s College, Ahmedabad, 27-30 December 2016. [Attended only]
- (2) National Workshop on “Problem Solving Technique in Mathematics” (supported by UGC) held at the Faculty of Science, M.S. University of Baroda, Vadodara, 27 November – 1 December 2017. [Attended only]
- (3) Conference on “Algebraic groups, their friends and relations” (in honour of Nikolai Vavilov’s 70th birthday) held at St. Petersburg, Russia, 18–23 September 2022. [Attended online]
- (4) Conference on “Groups and Representations” held at IIT Bombay, Mumbai, 3–8 July 2023. [Presented]
- (5) NCM Workshop on “Lie Groups and Representation Theory” held at IISER, Berhampur, 16–24 December 2024. [Attended only]
- (6) Conference on “Representations of Groups and Algebras” held at IMSc, Chennai, 3–5 February 2025. [Presented]
- (7) ISF Workshop on “Algebra, Geometry, Dynamics” (in memory of Boris I. Plotkin) held at Bar-Ilan University, Ramat-Gan, Israel, 10–13 November 2025. [Attended only]

- (8) IMU (Israel Mathematical Union) Annual Meeting held at Bar-Ilan University, Ramat-Gan, Israel, 5–6 July 2026. [Attended only]
- (9) International workshop on “Algebraic Geometry and Model Theory of Groups and Rings IV” held at Tbilisi, Georgia, 24–29 August 2026. [Presented]

SKILLS

- **Languages:** Proficient in reading, writing, and speaking in English, Hindi and Gujarati
- **Coding:** LaTeX, Python, sagemath, GAP, C++

REFERENCES

- (1) Prof. Shripad M. Garge
Associate Professor
Department of Mathematics
IIT Bombay, Mumbai, India
E-mail: smgarge@gmail.com, shripad@math.iitb.ac.in
- (2) Prof. Elena I. Bunina
Professor
Department of Mathematics
Bar-Ilan University, Ramat-Gan, Israel
E-mail: helenbunina@gmail.com
- (3) Prof. Dipendra Prasad
Emeritus Fellow
Department of Mathematics
IIT Bombay, Mumbai, India
E-mail: prasad.dipendra@gmail.com, dprasad@math.iitb.ac.in
- (4) Prof. Maneesh Thakur
Professor
ISI Bangalore, India
E-mail: maneesh@isibang.ac.in

DECLARATION

I hereby declare that all the above-mentioned information provided by me stands true to the best of my knowledge and if there is any discrepancy found, I shall be liable for any disciplinary action deemed suitable by the competent authority.

Last Updated on: 13 September 2026