Curriculum Vitae of Dr. Anuradha S. Garge,
Assistant Professor,
Department of Mathematics,
Kalina Campus,
University of Mumbai,
Mumbai-400098.

- **Personal details:**
  - Name: Anuradha Shripad Garge.
  - Current Position and Address:
    Assistant Professor,
    Department of Mathematics, University of Mumbai,
    Mumbai - 400 098, India.
  - Address for correspondence: c/o Prof. S. M. Garge,
    Department of Mathematics,
    IIT Bombay, Powai,
    Mumbai-400076, India.
  - Date of birth: 26 December 1979.
  - E-mail: anuradha.garge@gmail.com
  - Nationality: Indian.
- **Areas of interest:**

  Algebraic K-theory, Commutative Algebra, Algebraic Number Theory.
- **Thesis:**
  - Title: "Waring's problem for matrices over the ring of integers of an algebraic number field".
  - Summary: The thesis consisted of the following two parts:
    - ◇ Waring's problem for matrices over the ring of integers of an algebraic number field. This is joint work with Prof. S. A. Katre, University of Pune.
    - ◇ Getting a nice group structure (from W. van der Kallen's group structure) on the orbit space of unimodular rows modulo elementary action. This is joint work with Prof. Ravi A. Rao, Tata Institute of Fundamental Research, Mumbai.

- **Academic Qualifications/Affiliations:**

Institution	Position	Year, Degree	Class
1. S. P. College, Pune	Student	1997-2000 Bachelor	2nd rank in Pune University
2. IIT, Bombay	Student NBHM fellowship	2000-2002 Master	CPI: 7.37
3. University of Pune	CSIR fellow	Jan. 2003 Sept. 2006	Defence/Ph.D. Degree December 2007/2008
4. University of Bielefeld	Visiting student	Jan. 2007 Nov. 2007	– –
5. IIT, Bombay	NBHM postdoctoral fellow	Jan. 2008 May 2008	– –
6. University of Bielefeld	DAAD postdoctoral fellow	June 2008 Sept. 2009	– –
7. IIT, Bombay	NBHM postdoctoral fellow	Sept. 2009 July 2010	– –
8. CBS, Mumbai	Assistant Prof. + Research Associate	1 Aug. 2010 Jan. 2013	– –
9. Univ. of Mumbai,	Assistant Prof. –	16 Jan. 2013 onwards	– –

- **Examinations cleared:**
  - Secured second rank in Pune University, during Bachelors.
  - Recipient of the NBHM scholarship, during Masters.
  - Recipient of the CSIR fellowship, during Ph.D.
  - Cleared the NET (with JRF), SET, GATE examinations.
- **Academic Visits:**

  Visiting student of Prof. Anthony Bak at Fakultät für Mathematik, Germany:
  – 10 January 2007 to 27 November 2007.
  Invited talk at the Department of Mathematics, Münster, Germany.
  – 13 November 2007.
  Invited talk at the Department of Mathematics, Münster, Germany.
  – 16 April 2009.
  Invited talk at the Department of Mathematics, Düsseldorf, Germany.
  – 10 June 2009.
  Invited talk at the meeting of DAAD Students, Hannover, Germany, titled:
  "A mathematical walk through Germany".
  – 20 June 2009.

- **Workshops Attended and Invited talks given:**
  - Workshop on p-adic analysis, held at Vivekananda College, Chennai, 2003.
  - Workshop on Anand-Dumir-Gupta conjecture, held at Department of Mathematics, University of Pune, 2003.

- Workshop on Mathematical softwares, held at Bhaskaracharya Pratishthana, 2004.
- Annual Foundation School - I, IIT Bombay, May 2004.
- Annual Foundation School - II, HRI, Allahabad, December 2004.
- Advanced Instructional School in Commutative Algebra and Algebraic Geometry, IIT Bombay, July 2005.
- Workshop on the mathematical softwares KASH, SCILAB, GAP and MATHEMATICA, Department of Mathematics, University of Pune, 2006.
- Attended the course "A panorama of K-theory", by M. Karoubi, Jussieu, Paris, October 2006 to January 2007.
- Attended the Sedano Winter School on K-theory, held at Sedano, Spain from January 22, 2007 to January 27, 2007. Participated in the poster session and gave a lecture in the student seminar.
- Attended a workshop on Motives and projective homogeneous varieties, held at Mainz, Germany from September 17, 2007 to September 21, 2007.
- Attended a workshop on Buildings in Münster, Germany from October 8, 2007 to October 11, 2007.
- Attended the introductory session of the focussed semster on KK-theory, Münster, May 2009.
- Lectured in AFS-II held at Pune University on Integral Extensions and Going-Up, Going-Down Theorems.
- Attended and gave a lecture on Hilbert Syzygy theorem in the workshop on Computational Commutative Algebra and Algebraic Goemetry at NIIT University, Neemrana, Rajasthan.
- Presented paper in National Conference on "Topics in Commutative Algebra", 24-25 January 2016 at Institute of Science, Mumbai.
- Attended (and lectured on Chevalley Basis and Structure constants) in AIS on Chevalley Groups, Steinberg Lecture Notes, May 13-25, 2013.
- Attended (and lectured on Bilinear Forms) in AIS on Classical Groups, IISER Pune, December 5-26, 2013.
- Attended (and lectured) in AIS on Quadratic Forms, IISER Mohali (2 June 2014-21 June 2014) on Witt Groups and Witt Rings.
- Gave a guest lecture in Teacher's Enrichment Workshop (27 May 2014-2 June 2014) held at Punjab University on Double Cosets and Sylow theorems.
- Attended (and tutored) in AIS on Lie Groups, IIT Bombay, July 7-26, 2014.
- Attended the Induction training programme, from December 2-6, 2013, conducted by the UGC Academic Staff College, University of Mumbai.
- Completed (with A Grade) the Orientation programme, from September 3, 2014 to October 3, 2014 conducted by the UGC Academic Staff College, University of Mumbai.
- Completed (with A Grade) the Refresher course, from November 8, 2016 to November 26, 2016 conducted by the UGC Academic Staff College, University of Mumbai,
- Talk at R. D. National College, Pick's theorem, 2015.
- Talk at R. D. National College, Linear Algebra and Google, February 2016.
- Talk at STTP programme, Vidyalankar Institute of Technology, 29 November 2016 on "Omnipresence of Eigenvalues".

- Invited for Applied Mathematics Advisory Panel Meeting held at Vidyalankar Institute of Technology, 30 January 2017.
- Invited talk at Patkar College, Shoda's theorem, 10 January 2018.
- Invited lectures at Shivaji University, Kolhapur, 3 lectures delivered on "Singular Value Decomposition" in the week 28 February 2018- 5 March 2018.
- Invited lecture in International Conference on Algebra and Analysis, In honour of Professor Katre and Professor Bhate, 1 lecture on "Generation of the special linear group over the ring of Gaussian integers".

- **Other Academic Activities:**
  - Lectured in the International Mathematics Olympiad Training Camp held at HBCSE, 2012, 2013.
  - Part of the Mumbai team for conducting the Madhava Mathematics Competition for undergraduates.
  - Lectured in mini-MTTS held at Ruia College.
  - Lectured in main MTTS, held at ICT-Mumbai, Matunga.
  - Part of the Interview Committee for conducting KVPY interviews, 2015-2017.
  - Reviewer for the American Mathematical Society, MathSciNet.
  - Prepared study material for IDOL, in the subject Analysis and Topology.
  - Referee for an M.Phil thesis of a student from Indore University on Algebraic Coding Theory.
  - Invited as expert for selection of a candidate, 4 July 2014, for undergraduate teaching in St. Xavier's College, Mumbai.
  - Invited as expert for evaluation of several projects of students from Center for Excellence in Basic Sciences, Mumbai.
  - Examiner for M. Phil thesis of a student from Devi Ahilya University, Indore, November 2016.
  - Part of the team to run a SWAYAM-MOOC Course on Topology for M.Sc. students, June-October 2019.

- **Workshops/Conferences Organized:**
  - Part of the organizing Committee of the workshop on Borsuk Ulam Theorem and applications under Indian Women and Mathematics, sponsored by the National Board for Higher Mathematics at the Department of Mathematics, held at University of Mumbai, December 23-28, 2013.
  - Part of the organizing Committee of the workshop on Undergraduate Syllabus, conducted by the Department of Mathematics, University of Mumbai, December 2015.
  - Convenor of the DST-Purse funded workshop held at the Department of Mathematics, University of Mumbai, $12 - 17$ December 2016, on "Matrix Groups."
  - Coducted a one week short term programme at the UGC Academic Staff College, Mumbai on "Applications of Linear Algebra" for College teachers from August $7 - 12$ 2017 along with Dr. Madhumita Gangopadhyay.
- **M.Phil/Ph.D students Guiding/Guided:**
  - Ralph Lazarus, Degree awarded to the M. Phil Thesis titled Twisted Frobenius Schur Indicator.

  - Nitin Kenjale, Thesis submitted, Result received and process for result in progress, M. Phil thesis titled Rank and kernel of Hadamard Codes.
  - Murtuza Nullwala, Thesis submitted, Result received and process for result in progress, M. Phil thesis titled Bhargava's view on Gauss Composition.
  - Naresh Afre, Thesis submitted, Result received and process for result in progress, M. Phil thesis titled Generation of special linear group over rings of integers of imaginary quadratic number fields of class number one.
  - Prakash Sansare, Current M. Phil student.
  - Prabhat Upadhyay, Current M. Phil student.
  - Bhakti Velankar, Current M. Phil student.
  - Rakesh Barai, Current Ph. D. student, Registered.
  - Sandeep Kajabe, Current Ph. D. student, Registered.
  - Naresh Afre, Current Ph. D. student, Registered.

- **Teaching Experience:**
  - Taught at graduate level for six months (August 2002 to January 2002) at Fergusson College, Pune, India.
  - Taught at graduate level for one semester (August 2005 to December 2005) at Jai-Hind College, Mumbai, India.
  - Participated as an associate for conducting the problem solving sessions of Commutative Algebra and Algebraic Number Theory courses at the Annual Foundation School - II held at Bhaskaracharya Pratishthana, Pune, June 2006.
  - Participated as a tutor for the Algebraic Number Theory course given by Prof. C. M. Ringel, Bielefeld, Summer Semester 2006-2007.
  - Participated as a tutor for the Commutative Algebra course given by Prof. Thomas Zink, Bielefeld, Winter Semester 2008-2009.
  - Tutor for Calculus MA-105 given by Prof. B. V. Limaye, IIT Bombay, 2009-2010.
  - Taught at Center for Excellence in Basic Sciences, August 2010-January 2013.
  - Taught the subjects: Linear Algebra, Real Analysis, Commutative Algebra, Groups, Rings and Fields, Modules over Principal Ideal Domains, Discrete Mathematics, Functional Analysis, Complex Analysis and Skill Based Course: Statistical Methods from January 2013 to November 2019.
    Regularly teaching M. Phil Algebra Course and Research methodology.

- **Other interests and language skills:**
  - Done an Advanced Diploma in German, from Ranade Institute, University of Pune. Passed the TESTDAF, September 2008 test for foreigners for German language.
  - Done a four month course in French at Alliance Francais, Pune.
  - Completed Sangeet Alankar (MA level) from Gandharva Mahavidyalaya, 2010.

- **List of Publications:**

(1.) "A nice group structure on orbit space of unimodular rows": Garge, A. S., Ravi Rao, K-theory 38 (2008) no. 2, 113 – 133.

(2.) "The Steinberg formula for orbit groups:" Garge, A. S., Expo. Math. 27 (2009), no 4, 341-349.

(3.) "Matrices over commutative rings as sums of k-th powers" Katre S. A., Garge A. S., Proc. Amer. Math. Soc. 141 (2013), no 1, 103-113.

(4.) "A nice group structure on the orbit space of unimodular rows-II:" Gupta, Anjan, Garge, A. S., Ravi Rao, J. Algebra 407, (2014), 201-223.

(5.) "Triangular numbers:" Garge, A. S., Shirali, S. A., Resonance 17 (7), 672-681, July 2012.

(6.) "Lagrange's four square theorem:" Garge, A. S., At Right Angles, Magazine by Azim Premji Insitute, September 2013.

(7.) "Global actions, K-theory and unimodular rows": Bak, A., Garge A. S., To appear in Forum of Mathematics, Sigma, 2019/2020.

(8.) "Matrices over commutative rings as sums of fifth and seventh powers of matrices" Garge, A. S., To appear in Linear and Multilinear Algebra, 2019/2020.

(9.) "Generation of the special linear groups over rings of integers of imaginary quadratic number fields of class number one", Garge A. S., Afre, N. V, Submitted for publication.

(10.) "Waring's problem for quadratic forms over fields," Murtuza Nullwala, Garge A. S., Submitted for publication.