Curriculum Vitae

Hassain M

Assistant Professor,
Department of Mathematical and Computational Sciences,
NIT Karnataka, Surathkal,
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Research Interests

Representation theory of finite groups.

Area of Specialisation

Representation theory of general and special linear groups over compact discrete valuation rings.

Education

- Integrated Ph.D. (dual M.Sc + Ph.D. degree) (Mathematics), Indian Institute of Science, Bangalore, India (August 2012-December 2019). CGPA: 7.0 (out of 8).
- B.Sc.(Mathematics), University of Calicut, Kerala, India (June 2009-May 2012). CGPA: 3.63 (out of 4).

Work Experience

- Assistant Professor, Department of Mathematical and Computational Sciences, NIT Karnataka, Surathkal (12th November 2026 - present).
- Assistant Professor, GITAM (Deemed to be University), Hyderabad (15th July 2026 - 9th November 2026).
- NBHM Postdoctoral Fellow, Indian Statistical Institute, Bangalore Centre (1st July 2025 - 14th July 2026).
- Postdoctoral Fellow, Harish-Chandra Research Institute, Prayagraj(Allahabad) (30th June 2023 - 20th June 2025).
- Postdoctoral Fellow, The Institute of Mathematical Sciences, Chennai (8th April 2021 - 12th June 2023).
- Postdoctoral Fellow, Kerala School of Mathematics, Kozhikode, Kerala (15th December 2020 - 23rd March 2021).
- Research Associate, Indian Institute of Science, Bangalore (30th July 2019 - 29th July 2020).

Awards and Scholarships

- NBHM Postdoctoral Fellowship, 2024.

- Prof. P L Bhatnagar Medal 2016, at Indian Institute of Science, Bangalore (for the best performance in course work in the Integrated Ph.D. programme).
- CSIR- Shyama Prasad Mukherjee Fellowship, 2016.
- UGC-CSIR Junior Research Fellowship, 2016.
- Qualified National Eligibility Test (NET) with All India Rank 3 in 2016.
- Qualified IIT-Joint Admission Test for M.Sc. (IIT JAM) with All India Rank 50 in 2012.

Publications

- **Representation growth of compact special linear groups of degree two**,
  (with Pooja Singla) Advances in Mathematics, Volume 396, Paper No. 108164, 61 pages, 2022, https://doi.org/10.1016/j.aim.2021.108164.
- **Construction of even-level representations of $\mathrm{SL}_2(\mathfrak{o})$ with residue field of characteristic two**,
  Journal of Pure and Applied Algebra, Volume 228, Paper No. 107737, 24 pages, 2024, https://doi.org/10.1016/j.jpaa.2024.107737.
- **Branching rules for the restriction of regular representations of $\mathrm{GL}_2(\mathfrak{o}/\mathfrak{p}^r)$ to $\mathrm{SL}_2(\mathfrak{o}/\mathfrak{p}^r)$**,
  Communications in Algebra, Volume 53(2), Pages 895-900, 2025,
  https://doi.org/10.1080/00927872.2024.2393704.
- **Tensor product of irreducible characters of $\mathrm{GL}_2(\mathbb{F}_q)$**,
  (with Archita Gupta) Journal of Algebra and Its Applications, p.2650113, ISSN: 1793-6829, 10 pages, 2025,
  https://doi.org/10.1142/S0219498826501136.
- **On tensor products of regular characters of the general linear and unitary groups of degree two over the principal ideal local rings of finite length**,
  (with Archita Gupta and Pooja Singla) arXiv preprint, 36 pages, 2025,
  https://arxiv.org/abs/2511.01591.

Courses Taught

- Probability and Statistics for Engineers (for B. Tech. second year), GITAM (Deemed to be University), Hyderabad (July - November 2026).

Teaching Assistance

- Geometry of Vision, NPTEL Online Certification course (August- September 2022).
- Advanced Instructional School on Representation Theory held at CMI, Chennai, 20th June - 9th July, 2022.
- Algebraic Combinatorics, NPTEL Online Certification course (January- March 2022).
- Our Mathematical senses Part1: Geometry of Vision, NPTEL Online Certification course (August- September 2021).

- MA-231: Topology, IISc, Bangalore (August- December 2017).
- UM-203: Elementary Algebra and Number Theory, IISc, Bangalore (January-April 2017).
- UM-202: Introduction to Basic Analysis, IISc, Bangalore (January- April 2016).
- UM-201: Probability and Statistics, IISc, Bangalore (August- December 2015).
- MA-219: Linear Algebra, IISc, Bangalore (August- December 2014).

Talks given

- "Branching rules and tensor product of representations of $\mathrm{GL}_2(\mathfrak{o}/\mathfrak{p}^r)$" at Harish-Chandra Research Institute, Prayagraj on May 31, 2024.
- "Representations of 2×2 Special Linear Groups Over Compact Discrete Valuation Rings" at Harish-Chandra Research Institute, Prayagraj on July 25, 2023.
- "Introduction to Representation Theory of Finite Groups" at Harish-Chandra Research Institute, Prayagraj on July 24, 2023.
- "Representations of Compact Special Linear Groups of Degree Two" in ARCSIN seminar series (organized jointly by IMSc, IISc and IIT Kanpur), on April 30, 2021.
- "Representations of compact special linear groups of order two: construction, representation growth and group algebras" at Kerala School of Mathematics, Kozhikode on November 24, 2020.
- "The field of p-adic numbers - an introduction" at Indian Institute of Science, Bangalore (Student's seminar) on January 22, 2019.
- "Representation growth of special compact linear groups of order two" at Indian Institute of Science, Bangalore on January 4, 2019.
- "Representation growth of special compact linear groups of order two" at International Conference on Algebra, Combinatorics, and Representation Theory held at IISER, Thiruvananthapuram on December 5-8, 2018.
- "Irreducible representations of SL_2 over principal ideal local rings of even characteristic" at 83^{rd} Annual Conference of the Indian Mathematical Society held at SVU, Tirupati on December 12-15, 2017.
- "Representation of finite groups - an introduction" at a National Seminar on Functional and Harmonic Analysis held at PSMO College, Thirurangadi, Kerala on March 16-18, 2016.
- "Representations and conjugacy classes of $\mathrm{GL}_2(\mathbb{F}_q)$" at Indian Institute of Science, Bangalore (Student's seminar) on January 27, 2015.
- "Representations and conjugacy classes of $\mathrm{GL}_2(\mathbb{Z}/p^k\mathbb{Z})$" at Indian Institute of Science, Bangalore (Student's seminar) on May 27, 2014.

Workshops/ Conferences Attended

- Advanced Instructional School on Representation Theory held at CMI, Chennai, 20th June - 9th July, 2022.
- Workshop on Group Algebras, Representations and Computation held at ICTS, Bangalore, October 14-23, 2019.
- International Conference on Algebra, Combinatorics, and Representation Theory held at IISER, Thiruvananthapuram on December 5-8, 2018.
- 83^{rd} Annual Conference of the Indian Mathematical Society held at SVU, Tirupati, December 12-15, 2017.
- Group theory and Computational Methods held at ICTS, Bangalore, November 05-14, 2016.
- NCM Workshop on Probability and Representation Theory held at IMSC, Chennai, March 7-12, 2016.
- Workshop on probability and representation theory, Department of Mathematics, IISc, Bangalore, March 6-7, 2015.