

# Rahul Singh

## Curriculum Vitae

30A Oakview Terrace  
Boston, MA 02130, USA  
[rahul.sharpeye@gmail.com](mailto:rahul.sharpeye@gmail.com)  
[mathserver.neu.edu/~rahul](http://mathserver.neu.edu/~rahul)

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### Personal details

Birth October 1, 1989  
Affiliation Dept of Mathematics, Northeastern University  
Languages English (Fluent), Hindi (Fluent), French (Basic)  
Citizenship Indian  
Coding MACAULAY2, L<sup>A</sup>T<sub>E</sub>X, SAGE, HASKELL, PYTHON

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### Education

2014— **PhD in Mathematics**, *Northeastern University*, expected June 2019.  
2012—2014 **MS in Mathematics**, *Northeastern University*.  
2008—2011 **BSc. (Hons.) in Mathematics and Computer Science**, *Chennai Mathematical Institute*, CMI Gold Medal of Excellence.

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### List of Publications

1. V. Lakshmibai, C.S. Seshadri, Rahul Singh. *Cotangent Bundle to the Flag Variety - I*. Transformation Groups (2017). [arXiv:1609.09551](https://arxiv.org/abs/1609.09551)
2. V. Lakshmibai, Rahul Singh. *Cotangent Bundles of Partial Flag Varieties and Conormal Varieties of their Schubert Divisors*. To appear in Transformation Groups. [arXiv:1712.00107](https://arxiv.org/abs/1712.00107)
3. V. Lakshmibai, Rahul Singh. *Conormal Varieties on the Cominuscule Grassmannian*. [arXiv:1712.06737](https://arxiv.org/abs/1712.06737)
4. Ivan Martino, Rahul Singh. *Finite Groups Generated in Low Real Codimension*. Submitted. [arXiv:1804.05089](https://arxiv.org/abs/1804.05089)
5. Rahul Singh. *Conormal Varieties on the Cominuscule Grassmannian - II*. [arXiv:1805.12297](https://arxiv.org/abs/1805.12297)

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### Teaching

1. **Calculus for Business and Economics**. *Instructor*. Northeastern University. Fall 2014.
2. **Introduction to Mathematics**. *Instructor*. Northeastern University. Fall 2015, Winter/Fall 2016, Winter/Fall 2017, Winter/Fall 2018.
3. **Algebra 4**, *Teaching Assistant*. Chennai Mathematical Institute. Winter 2011.
4. **Calculus for Business and Economics**. *Teaching Assistant*. Northeastern University. Fall 2013.

5. **Probability and Statistics.** *Teaching Assistant.* Northeastern University. Summer 2014.
6. **Calculus and Differential Equations for Biology I.** *Teaching Assistant.* Northeastern University. Fall 2017.
7. **Applied Mathematics Capstone.** *Teaching Assistant.* Northeastern University. Winter 2017, Winter 2018.
8. **Research Capstone.** *Mentor.* Northeastern University. Fall 2015.
9. **Bridge to Calculus.** *Mentor, Substitute Instructor.* Northeastern University. Summer 2013, Summer 2015, Summer 2018.
10. **Research Experience for Undergraduates.** *Mentor.* Northeastern University. Summer 2018.

### Selected Talks

1. 9 October, 2018. *Algebra Seminar.* **University of Oregon Eugene.** The Conormal Variety of a Schubert Variety.
2. 2 October, 2018. *Algebra and Algebraic Geometry Seminar.* **University of Washington.** The Conormal Variety of a Schubert Variety.
3. 1 October, 2018. *Algebraic Geometry Seminar.* **University of British Columbia.** The Conormal Variety of a Schubert Variety.
4. 26 September, 2018. *Algebraic Geometry Seminar.* **University of California Davis.** The Conormal Variety of a Schubert Variety.
5. 19 June, 2018. *Combinatorial Algebraic Geometry Retrospective Workshop.* **The Fields Institute for Research in Mathematical Sciences.** Conormal Varieties on the Cominuscule Grassmannian.
6. 10 June, 2018. *Southeastern Lie Theory Workshop X.* **University of Georgia.** Conormal Varieties on the Cominuscule Grassmannian.
7. 5 March, 2018. *Representation Theory Seminar.* **University of Massachusetts Amherst.** The Conormal Variety of a Schubert Variety.
8. 14 June, 2017. **Tata Institute of Fundamental Research Mumbai.** Conormal Varieties on the Cominuscule Grassmannian.
9. 24 May, 2017. **Chennai Mathematical Institute Chennai.** Conormal Varieties on the Cominuscule Grassmannian.
10. 23 May, 2017. **Institute of Mathematical Sciences Chennai.** Cotangent Bundle of the Flag Variety.
11. 10 April, 2017. *Geometry, Algebra, Singularities, Combinatorics.* **Northeastern University.** Conormal Varieties of Schubert Varieties in Cominuscule Grassmannians.

12. 9 April, 2017. *Graduate Student Combinatorics Conference 2017*. **University of Kansas**. Conormal Variety of Schubert Variety in a Cominuscule Grassmannian.

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## Conferences and Summer Schools Attended

1. June 2018. *Combinatorial Algebraic Geometry Retrospective Workshop*. **The Fields Institute for Research in Mathematical Sciences**.
2. June 2018. *Summer School on Lie Theory*. **University of Georgia**.
3. June 2018. *Southeastern Lie Theory Workshop X*. **University of Georgia**.
4. May 2018. *Representation Theory, Geometry, and Quantization: The Mathematical Legacy of Bertram Kostant*. **Massachusetts Institute of Technology**.
5. April 2018. *Mid-Atlantic Algebra, Geometry, and Combinatorics Workshop*. **Drexel University**.
6. April 2017. *Graduate Student Combinatorics Conference 2017*. **University of Kansas**.
7. August 2014. *Kazhdan-Lusztig Theory and Soergel Bimodules*. **University of Oregon Eugene**.
8. May 2014. *Workshop on Yangians and Quantum Loop Algebras*. **University of Texas at Austin**.
9. December 2011. *Representation Theory of Finite Groups of Lie type: Deligne-Lusztig Theory*. **Tata Institute of Fundamental Research**.

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## Activities

1. 2014. Secretary. Mathematics Graduate Student Association. [mathserver.neu.edu/~mgsa](http://mathserver.neu.edu/~mgsa)
2. 2018. Vice-President. Mathematics Graduate Student Association.
3. 2015–2018. Volunteer. Calculus Field Day. [cos.northeastern.edu/mathematics/about/outreach/](http://cos.northeastern.edu/mathematics/about/outreach/)

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## Honors and Awards

1. 2011 **CMI Gold Medal of Excellence** for achieving highest CGPA in the 2008–2011 class. Chennai Mathematical Institute.
2. 2016 **Ling-Ma Fellowship**. Northeastern University.