

# Nivedita Bhaskhar - CV

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## Appointments

**2019-today**   Assistant Professor (RTPC) of Mathematics - Algebra group at USC

**2016-2019**   Hedrick Assistant Adjunct Professor - Algebra group at UCLA

## Education

**2011-2016**   PhD in Mathematics - Emory University, Atlanta, under Prof R. Parimala (CGPA 4/4)

**2009-2011**   Masters in Mathematics - Northeastern University, Boston (CGPA 4/4)

**2006-2009**   B.Sc. Honours in Mathematics & Computer Science - Chennai Mathematical Institute, India (CGPA 9.76/10)

## Skills

- Machine learning, Programming, Data Analysis
- Python, PyTorch, SQL, Pandas, Flask
- Teaching, Mentoring, Presentations, Expository writing

## Publications and preprints

- Brauer  $p$ -dimension of complete discretely valued fields (with Bastian Haase), Transactions of the AMS **373** (2020): 3709-3732
- The norm principle for type  $D_n$  groups over complete discretely valued fields, (with V. Chernousov and A. Merkurjev), Transactions of the AMS **372** (2019): 97-117
- Reduced Whitehead groups of prime exponent algebras over  $p$ -adic curves  
arXiv:1808.09021 (pre-print) (2018), *submitted*.
- R-equivalence and norm principles in algebraic groups (Thesis) (2016)  
<https://etd.library.emory.edu/view/record/pid/emory:rgqnh>
- On Serre's injectivity question and norm principle, *Commentarii Mathematici Helvetici* **91** (2016): 145-161  
(DOI: 10.4171/CMH/381)
- More examples of non-rational adjoint groups, *Journal of Algebra* **397** (2014): 39-46
- Hasse principle for G-quadratic forms (with Eva Bayer-Fluckiger and R. Parimala)  
*Documenta Mathematica* **18** (2013): 383-392

## Talks and presentations

- **Reduced Whitehead groups of algebras**  
Number Theory Seminar, Caltech, Los Angeles, October 2019  
Southern California Algebraic Geometry Seminar, Los Angeles, October 2019  
AMS Special Session on Algebraic Groups, Galois Cohomology, and Local-Global Principles, Honolulu, March 2019  
Colloquium, Tata Institute of Fundamental Research, Mumbai, December 2018  
Algebraic Geometry Seminar, University of Utah, Salt Lake City, December 2018
- **On rational points, zero cycles and norm principles**  
Algebra seminar, University of Southern California, Los Angeles, October 2019  
Emerging Research in Algebraic Groups, Motives, and K-theory, St Petersburg, September 2019  
Colloquium, Institute of Mathematical Sciences, Chennai, December 2018  
Colloquium, University of Virginia, Charlottesville, December 2018  
Special colloquium, University of Utah, Salt Lake City, December 2018
- **The norm principle for type  $D_n$  groups over complete discretely valued fields**  
AMS Special Session on Homological Aspects of Noncommutative algebra and geometry, San Francisco, October 2018  
Affine Algebraic Groups, Motives and Cohomological Invariants, BIRS, Banff, September 2018
- **Brauer  $p$  dimension of complete discretely valued fields**  
CMI Online Seminar Series, June 2020  
The 13th Brauer group conference at Pingree Park, Colorado, June 2018  
Algebraic geometry and number theory seminar at Rice University, Houston, November 2017  
Emory Conference on Higher Obstructions to Rational Points, Emory, Atlanta, May 2017
- **Motivic cohomology - a survey**  
Algebra seminar at UCLA, Los Angeles, February 2017
- **Reduced Whitehead groups of division algebras over function fields of  $p$ -adic curves**  
10th annual symposium for Women in Mathematics in Southern California, LA, February 2017  
The Use of Linear Algebraic Groups in Geometry & Number Theory, BIRS, Banff, September 2015
- **Serre's injectivity question for reductive groups**  
Algebra seminar at UCLA, Los Angeles, November 2016  
International Conference on Algebra & Geometry, CMI, Chennai, July 2015  
The 12th Brauer group conference at Pingree Park, Colorado, June 2015
- **A proof by patching of the cyclicity of prime degree algebras over  $p$ -adic curves**  
AMS Special Session on Quadratic Forms in Arithmetic and Geometry, Huntsville, March 2015
- **Borel-Tits compactification of affine groups over perfect fields**  
Algebraic Groups and Representations workshop, Lyon, June 2014
- **More examples of non-rational adjoint groups**  
Algebraic geometry seminar at Rice University, Houston, November 2014  
Young Women and Mathematics (YWM), Pune, July 2014  
Algebra seminar at EPFL, Lausanne, June 2014  
Poster session in Texas Algebraic Geometry Symposium at Rice University, Houston, April 2014  
AMS Special Session on Galois Cohomology and the Brauer Group, Knoxville, March 2014
- **Rationality of varieties of adjoint groups**  
Algebra seminar at Emory University, Atlanta, January 2014

## Teaching experience

### Instructor at USC

**Fall 2020** Elementary number theory (M430) & Statistical Inference and Data Analysis I (M307)

**Spring 2020** Calculus I (M125)

**Fall 2019** Contemporary precalculus (M108)

### Instructor at UCLA

**Spring 2019** Mathematical cryptology (M116) & Analysis (M31A)

**Fall 2018** Algebra Honors (M110AH)

**Spring 2018** Linear Algebra and applications (M33A) & Integration and Infinite series (M31B)

**Fall 2017** Commutative algebra (M215A)

**Sum. 2017** Linear Algebra and applications (M33A) & Algebra (M110A)

**Spring 2017** Linear Algebra (M115B)

**Winter 2017** Discrete structures (M61)

**Fall 2016** Calculus for Life Sciences (M3A) & Algebra (M110A)

### Instructor at Emory University

**Spring 2015** Calculus II

**Fall 2014** Life Science Calculus I (Classes and Labs)

**Spring 2014** Life Science Calculus I and II (Labs)

**Fall 2013** Life Science Calculus I and II (Labs)

**Fall 2012** Calculus I (two sections)

**Fall 2011** Life Science Calculus (Labs)

### Instructor at Northeastern University

**Spring 2011** College Algebra

**Fall 2010** Mathematical Thinking

**Year 2009** Mathematical Thinking

## Fellowships and awards

- Graduate Student Research Award, Emory University, 2016
- University Excellence Fellowship, Northeastern University, 2009-2011
- CMI Medal of Excellence (B.Sc. Honours in Math & Comp. Science)
- National Talent Search Examination (NTSE) scholarship
- Kishore Vaigyanik Protsahan Yojana (KVPY) scholarship.

*This scholarship was instituted by the Department of Science and Technology, Government of India, to promote excellence in pure science*

## Activities

Algebra working seminar series at USC (2019) - *Co-organizer and speaker*

Distinguished Women in Math Lecture series at UCLA (2018-19) - *Organizer*

Linear Algebraic Groups weekly seminar at Emory (Spring 2015) - *Organizer and speaker*

Lectures on division algebras weekly seminar at Emory (Spring 2014) - *Co-organizer and speaker*

## Olympiads and camps

**International Mathematics Olympiad Training Camp (IMOTC)** in 2005 and 2006

**International Olympiad in Informatics Training Camp** in 2006

## Conferences, workshops, summer schools attended

- **Southern California Algebraic Geometry Seminar**  
October 5, 2019 at the University of Southern California, Los Angeles
- **Emerging Research in Algebraic Groups, Motives, and K-theory**  
September 9 to 13, 2019 at the Euler International Mathematical Institute, St Petersburg
- **Spring Central and Western Joint Sectional Meeting, AMS**  
March 22 to 24, 2019 at the University of Hawaii at Manoa, Honolulu
- **ABC Algebra Workshop**  
November 10 to 11, 2018 at the University of Washington, Seattle
- **Fall Western Sectional Meeting, AMS**  
October 27 to 28, 2018 at the San Francisco State University, San Francisco
- **Workshop on Affine Algebraic Groups, Motives and Cohomological Invariants**  
September 16 to 21, 2018 at BIRS, Banff, Canada
- **The 13th Brauer group conference**  
June 18 to 22, 2018 at Pingree Park, Colorado
- **Southern California Number Theory Day**  
Oct 21, 2017 at UCI, Irvine
- **Western Algebraic Geometry Symposium**  
October 14 to 15, 2017 at UCLA, Los Angeles
- **Emory Conference on Higher Obstructions to Rational Points**  
May 15 to 19, 2017 at Emory University, Atlanta
- **The AWM Research Symposium 2017**  
April 8 to 9, 2017 at UCLA, Los Angeles
- **The Georgia Algebraic Geometry Symposium**  
March 3 to 5, 2017 at University of Georgia, Athens
- **10th annual symposium for Women in Mathematics in Southern California**  
February 11, 2017 at USC, Los Angeles
- **Joint Mathematics Meetings 2016**  
January 6 to 9, 2016 at Seattle, WA
- **Workshop on Local-Global Principles and Their Obstructions**  
October 1 to 3, 2015 at University of Pennsylvania, Philadelphia

- **Workshop on the use of Linear Algebraic Groups in Geometry and Number Theory**  
September 13 to 18, 2015 at BIRS, Banff, Canada
- **Summer School on Algebraic Stacks and Related Topics**  
August 31 to September 4, 2015, at the University of Mainz, Mainz, Germany
- **International Conference on Algebra, Geometry and History of Mathematics in honour of R. Sridharan**  
July 27 to 29, 2015 at Chennai Mathematical Institute, Chennai, India
- **The 12th Brauer group conference**  
June 8 to 12, 2015 at Pingree Park, Colorado
- **Southeastern Spring Sectional Meeting, AMS**  
March 27 to 29, 2015 at the University of Alabama, Huntsville
- **Clifford Lectures - Algebraic Groups: Structure and Actions**  
March 2 to 5, 2015 at Tulane University, New Orleans
- **Georgia Algebraic Geometry Symposium**  
October 17 to 19, 2014 at the University of Georgia, Athens
- **Young Women and Mathematics**  
July 25 to 27, 2014 at IISER, Pune, India
- **Algebraic Groups and Representations**  
June 2 to 20, 2014 at Institut Camille Jordan, Lyon, France
- **Texas Algebraic Geometry Symposium**  
April 4 to 6, 2014 at Rice University, Houston
- **Southeastern Spring Sectional Meeting, AMS**  
March 21 to 23, 2014 at the University of Tennessee, Knoxville
- **International Conference on the Algebraic and Arithmetic Theory of Quadratic Forms**  
December 16 to 21, 2013 at Puerto Natales, Patagonia, Chile
- **Georgia Algebraic Geometry Symposium**  
October 18 to 20, 2013 at the University of Georgia, Athens
- **Thematic Program on Torsors, Nonassociative Algebras and Cohomological Invariants**  
January 15 to May 31, 2013 at Fields Institute, Toronto, Canada
- **Galois Cohomology, motives and cubic Jordan algebras mini course**  
May 21 to 25, 2012, Lens, France
- **Arizona Winter School 2012**  
March 10 to 15, 2012 in Tucson, Arizona
- **Ramification in Algebra and Geometry Conference**  
May 16 to 20, 2011 in Emory University, Atlanta
- **CMI-ENS Exchange Programme**  
May 4 to June 26, 2009 at the Ecole normale superieure, Paris
- **Visiting Students' Research Programme**  
June 13 to July 11, 2008 at Tata Institute of Fundamental Research, Mumbai