

# Anand Deopurkar | Curriculum Vitae

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## Positions

<b>University of Georgia</b> <i>Assistant Professor (Limited Term)</i>	<b>Athens, GA</b> 2016–
<b>Columbia University</b> <i>J. F. Ritt Assistant Professor</i>	<b>New York, NY</b> 2012–2016

## Education

<b>Harvard University</b> <i>Ph.D., Advisor: Joseph Harris</i>	<b>Cambridge, MA</b> 2008–2012
<b>Massachusetts Institute of Technology (MIT)</b> <i>S.B., Mathematics with Computer Science</i>	<b>Cambridge, MA</b> 2004–2008

## Publications

- Vector bundles and finite covers (with Anand Patel).  
*Submitted.*
- Syzygy divisors on Hurwitz spaces (with Anand Patel).  
*To appear in Contemporary Mathematics Series.*
- Green’s canonical syzygy conjecture for ribbons.  
*Submitted.*
- Covers of stacky curves and limits of plane quintics.  
*Submitted.*
- The Picard rank conjecture for the Hurwitz spaces of degree up to five (with Anand Patel).  
*Algebra and Number Theory*, 9(2):459–492, 2015.
- Groebner techniques for ribbons (with Maksym Fedorchuk, David Swinarski).  
*Albanian Journal of Mathematics*, 8(1):55–70, 2015.
- Toward GIT stability of syzygies of canonical curves (with Maksym Fedorchuk, David Swinarski).  
*Algebraic Geometry (Foundation Compositio Mathematica)*, 3:1–22, 2016.
- Class of the Hodge eigenbundle using orbifold Riemann-Roch.  
*Appendix to Cyclic covering morphisms on  $\overline{M}_{0,n}$  by Maksym Fedorchuk.*
- Sharp slope bounds for sweeping families of trigonal curves (with Anand Patel).  
*Mathematical Research Letters*, 20(3):868–884, 2013.
- Modular compactifications of the space of marked trigonal curves.  
*Advances in Mathematics*, 248(0):96–154, 2013.
- Compactifications of Hurwitz spaces.  
*International Mathematical Research Notices*, 2014(14):3863–3911, 2013.
- Alternate compactifications of Hurwitz spaces.  
*Thesis, Harvard*, 2012.

## Grants and awards

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- AMS-Simons Travel Grant, 2016–2018.
- American Institute of Mathematics Workshop Funding (with Maksym Fedorchuk, Ian Morrison, Xiaowei Wang), 2016.
- Award for excellence in teaching, 2014. *Columbia departmental award*.
- Jon A. Bucsela prize, 2006. *MIT departmental award given to the top graduating mathematics major*.
- Rogers prize, 2006. *MIT departmental award for summer research*.
- William Lowell Putnam competition, 2004 (Rank 16–25), 2005 (Honorable mention), 2007 (Honorable mention).
- International Mathematical Olympiad, 2004 (Silver), 2003 (Bronze).

## Teaching

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### At the University of Georgia.....

- Math 2250 (Calculus for Science and Engineering), Fall 2016.

### At Columbia University.....

- Analysis and optimization, Spring 2016. *A course about linear and non-linear optimization methods*.
- Young tableaux in algebra and geometry, Fall 2015. *Undergraduate seminar based on Fulton's book Young Tableaux*.
- Calculus 1, Spring 2015.
- Moduli of curves, Fall 2014. *Graduate (topics) course in algebraic geometry. The webpage has most of the course notes*.
- Calculus 1, Spring 2014.
- Modern algebra 2, Spring 2014. *Rings, fields, and Galois theory*.
- Modern algebra 1, Fall 2013. *Group theory*.
- Calculus 3, Spring 2013.
- Calculus 2, Fall 2012.

### At Harvard University.....

- Linear algebra, 2012.
- Algebraic curves, 2011. *Course assistant for Joe Harris*.
- Calculus 2, 2010.
- Calculus 1, 2009.

## Invited Talks and Presentations

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### In conferences or workshops.....

- Conference on Moduli and Birational Geometry, Korea. *Vector bundles and finite covers*, 2016.
- Workshop on Cycles on moduli spaces, Geometric Invariant Theory, and Dynamics, ICERM, Brown University. *Cycles on Hurwitz spaces*, 2016.
- Joint mathematics meetings, Seattle, WA (Higher genus curves and fibrations of higher genus curves in mathematical physics and arithmetic geometry II). *Picard groups of Hurwitz spaces*, 2016.
- Joint mathematics meetings, Seattle, WA (Moduli spaces in algebraic geometry I). *Limits of plane quintics via covers of stacky curves*, 2016.

- BC-Northeastern algebraic geometry conference, Boston, MA. *Limits of plane quintics via covers of stacky curves*, 2015.
- SIAM applied algebraic geometry conference, Daejeon, Korea. *Syzygies of canonical curves and the geometry of  $\overline{M}_g$* , 2015.
- Mathematisches Forschungsinstitut Oberwolfach, Germany. *GIT stability of syzygies of curves (mini talk)*., 2015.
- Conference on moduli and birational geometry, Postech, Pohang, Korea. *Towards GIT stability of syzygies of canonical curves*, 2013.

#### In seminars.....

- Indian Institute of Science Education and Research (IISER), Pune. *Vector bundles and finite covers*, 2016.
- University of South Carolina. *Ribbons and Green's conjecture*, 2016.
- University of Georgia, Algebraic Geometry Seminar. *Ribbons and Green's conjecture*, 2016.
- University of Georgia, Oberseminar in Algebra, Geometry, and Number Theory. *The algebra of canonical curves and the geometry of their moduli space*, 2016.
- Purdue University, West Lafayette, IN. *Syzygies, GIT, and the moduli space of curves*, 2015.
- Ohio State University, Columbus, OH. *Limits of plane curves via stacky branched covers*, 2015.
- Harvard/MIT, Cambridge, MA. *Syzygies, GIT, and the log MMP for  $\overline{M}_g$* , 2015.
- Courant Institute, New York University, New York, NY. *Picard groups of Hurwitz spaces*, 2015.
- Indian Institute for Science Research and Education, Pune, India. *The birational geometry of  $\overline{M}_g$* , 2015.
- Stony Brook University, Stony Brook, NY. *Syzygies of canonical curves and birational geometry of  $\overline{M}_g$* , 2015.
- Yale University, New Haven, CT. *GIT stability of syzygies of canonical curves*, 2014.
- Boston College, Boston, MA. *Toward GIT stability of syzygies of canonical curves*, 2014.
- AMS sectional meeting, Philadelphia, PA (Geometry of algebraic varieties). *Toward GIT stability of syzygies of canonical curves*, 2013.
- Stanford University, Palo Alto, CA. *Alternate compactifications of Hurwitz spaces*, 2013.
- Princeton University, Princeton, NJ. *Compactifying spaces of branched covers*, 2013.
- Rice University, Houston, TX. *Alternate compactifications of Hurwitz spaces*, 2012.
- Harvard/MIT, Cambridge, MA. *Compactifications of Hurwitz spaces*, 2011.
- Columbia University, New York, NY. *Compactifications of Hurwitz spaces*, 2011.
- Stony Brook University, Stony Brook, NY. *Compactifications of Hurwitz spaces*, 2011.
- Brown University, Providence, RI. *Compactifications of Hurwitz spaces*, 2011.

#### Service

- Refereed for the Journal of the EMS, Algebra and Number Theory, Crelle, Manuscripta mathematica, and Advances in geometry.
- Co-organizing the workshop “Stability and moduli spaces” at the American Institute of Mathematics. Scheduled for January 2017
- Co-organized the Summer Workshop in Algebraic Geometry at the University of Georgia. August 2016

- Organizing the Fairly Informal Reading Seminar and Tea (FIRST) at the University of Georgia. Fall 2016
- Co-organized the graduate student algebraic geometry seminar at Columbia. Spring 2016
- Conducted Putnam preparation sessions at Columbia. Fall 2015
- Supervised an undergraduate independent reading course (“Generatingfunctionology”) at Columbia. Fall 2015
- Gave expository sessions for graduate students in the “Workshop on birational geometry and stability of moduli stacks and spaces of curves” in Hanoi, Vietnam. January 2014
- Served on the thesis defense committees of Natasha Potashnik, Zachary Maddock, and Xuanyu Pan at Columbia.
- Co-organized the poster session at AGNES at Boston College. 2013
- Organized the student algebraic geometry seminar at Harvard/MIT. 2010, 2011

## References

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### ◦ Joseph Harris

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### ◦ Brendan Hassett

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### ◦ Johan de Jong

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### ◦ Daves Maulik

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### ◦ Angela Gibney

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## Teaching.....

### ◦ Patrick Gallagher

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