

# CV – RAJU KRISHNAMOORTHY

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## Contact Information

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[Institut für Mathematik - AG](#)

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Citizenship: United States

## Employment

Wissenschaftlicher Mitarbeiter at HU Berlin	November 2022 - Present
Wissenschaftlicher Mitarbeiter at U. Wuppertal	December 2020 - October 2022
Limited Term Assistant Professor at UGA	August 2018 - August 2020
NSF Postdoctoral Fellow at FU Berlin	August 2016 - August 2018
Sponsor: Hélène Esnault	

## Education

### •Graduate Institution

Columbia University, M.A. in Mathematics,	May 2011
Columbia University, M.Phil. in Mathematics,	May 2014
Columbia University, Ph.D. in Mathematics,	May 2016

### •Undergraduate Institution

MIT, B.S. in Mathematics with Computer Science,	January 2009
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## Publications

1. Raju Krishnamoorthy, Ambrus Pál. *Rank 2 Local Systems and Abelian Varieties II*, arXiv 2003.07831, *Compositio Mathematica* 158:4 (2022) 868-892.  
DOI: 10.1112/S0010437X22007333
2. Raju Krishnamoorthy, Ambrus Pál, *Rank 2 Local Systems and Abelian Varieties*, arXiv 1089.02106, *Selecta Mathematica* 27:51 (2021).  
DOI: 10.1007/s00029-021-00669-8
3. Raju Krishnamoorthy, *Rank 2 Local Systems, Barsotti-Tate Groups, and Shimura Curves*, arXiv 1711.04797, *Algebra and Number Theory* 16:2 (2022) 231-259.  
DOI: 10.2140/ant.2022.16.231
4. Raju Krishnamoorthy, *Correspondences without a Core*, arXiv 1704.00335, *Algebra and Number Theory* 12:5 (2018) 1173-1214.  
DOI: 10.2140/ant.2018.12.1173

5. Raju Krishnamoorthy, *Dynamics, Graph Theory, and Barsotti-Tate Groups: Variations on a Theme of Mochizuki*, PhD Thesis.  
DOI: 10.7916/D88K792N
6. Ryan Daileda, Raju Krishnamoorthy, Anton Malyshev, *Maximal Class Numbers of CM Number Fields*. *J. Number Theory* 130:4 (2010) 936-943.  
DOI: 10.1016/j.jnt.2009.09.013

## Prepublications

1. Philip Engel, Raju Krishnamoorthy, Daniel Litt. *The Manin-Mumford conjecture in genus 2 and rational curves on K3 surfaces*, arXiv 2208.08729.
2. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Constructing abelian varieties from rank 2 Galois representations*, arxiv 2208.01999.
3. Raju Krishnamoorthy, Mao Sheng, *Periodic de Rham Bundles over Curves*, arXiv 2011.03268.
4. Raju Krishnamoorthy, Mao Sheng, *Periodic Higgs Bundles over Curves*, arXiv 2011.03272.
5. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Finiteness of logarithmic crystalline representations II*, arXiv 2009.00074, submitted.
6. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Finiteness of logarithmic crystalline representations*, arXiv 2005.13472.
7. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *Deformation theory of periodic Higgs-de Rham flows*, arXiv 2003.08906.
8. Raju Krishnamoorthy, Jinbang Yang, Kang Zuo. *A Lefschetz theorem for crystalline representations*, arXiv 2003.08906, submitted. **In revision at Forum of Mathematics Sigma.**

## Awards

- NSF Postdoctoral Fellowship, 2016-2018
- President's Fellowship at Columbia University, 2010-2011
- Clay Academy Junior Fellow, 2005

## Events organized

- Oberseminar on Applications of the étale fundamental group to algebraic geometry, SoSe21 (Bergische Universität Wuppertal).
- HIMR workshop on  $p$ -adic coefficients, June 2019 (Imperial College, London).

## Invited Talks

- Rank 2 local systems and abelian varieties, UW Madison, NT seminar, October 2022.
- An introduction to étale fundamental groups, preparatory talk for Ringvorlesung for GRK 2240, July 2021.
- A Lefschetz theorem for crystalline representations, Hodge Theory, Period Mapping and Local System, Université de Montreal, December 2020.
- Rank 2 local systems and abelian varieties, ZOOMerFEST: Young Algebraic Geometers, July 2020.
- Rank 2 local systems and abelian varieties, Max Planck Institute Bonn, February 2020
- Rank 2 local systems and abelian varieties, Universität Mainz, July 2019
- Rank 2 local systems and abelian varieties, TU München, June 2019
- Rank 2 local systems and abelian varieties, UC Irvine NT seminar, February 2019
- Rank 2 local systems and abelian varieties, Caltech NT seminar, February 2019
- Rank 2 local systems and abelian varieties, Columbia AG seminar, January 2019
- Rank 2 local systems and abelian varieties, IAS seminar on geometric applications of the Langlands correspondence, January 2019
- Rank 2 local systems and abelian varieties, Northwestern NT seminar, January 2019
- Analogs of the Hasse Invariant, UGA number theory seminar, September 2018
- Analogs of the Hasse Invariant, Humboldt Universität, May 2018
- Rank 2 local systems and abelian varieties, Autour de cycles algébriques (Paris), May 2018
- A motivated introduction to the companions conjecture, USTC Hefei, March 2018
- Correspondences without a Core, USTC Hefei, March 2018
- Analogs of the Hasse Invariant, TU München, February 2018
- Analogs of the Hasse Invariant, Universität Mainz, December 2017
- Analogs of the Hasse Invariant, UPenn AG, October 2017
- Rank 2 Local Systems and Abelian Varieties, BIRS (Banff), October 2017
- Analogs of the Hasse Invariant, Cornell AG, September 2017
- Analogs of the Hasse Invariant, FU Berlin Gästseminar, June 2017
- Dynamics and Graph Theory, FU Berlin Gästseminar January 2017
- Maximal Class Numbers of CM Number Fields, STAGE at MIT, 2008

## Teaching

- Tutor for Algebra at Bergische Universität Wuppertal, 2022 (**auf Deutsch**).
- Head tutor for Grundlagen der Mathematik, Linear Algebra I/II at Bergische Universität Wuppertal, 2020-2022. Ran Tutorium (**auf Deutsch**).
- Taught Calculus 1 at UGA, Fall 2018, Fall 2019
- Taught advanced undergraduate seminar on complex analysis and Riemann surfaces, Fall 2014
- Taught Calculus 1 at Columbia, Spring 2013, Spring 2016
- Shaunalynn Duffy and I started a creative math class for children with [sprout](#) in Somerville, MA. 2009-2010.