

Curriculum Vitae

JAY SHAH

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Appointments

Spring 2020 MSRI Postdoctoral Fellow, Program on Higher Categories and Categorification.
2017 – 2019 Visiting Assistant Professor, University of Notre Dame.

Education

2012 – 2017 **Ph.D. in Mathematics**, Massachusetts Institute of Technology.
Advisor: Clark Barwick.
2008 – 2012 **B.S. in Mathematics**, University of Chicago.

Scientific/Academic honors and grants

2012-2016 NSF Graduate Research Fellowship
2012 Paul R. Cohen Memorial Prize (awarded to those graduating seniors with the best record in mathematics)
2008-2012 University of Chicago College Honor Scholarship (full-tuition merit scholarship)

Research Interests

Algebraic topology, higher category theory, algebraic K -theory, equivariant homotopy theory, motivic homotopy theory, stratified spaces, computational aspects of topology.

Publications and Preprints

1. Scheiderer motives and equivariant higher topos theory (with E. Elmanto). December 2019. [arXiv:1912.11557](https://arxiv.org/abs/1912.11557).
2. On the parametrized Tate construction and two theories of real p -cyclotomic spectra (with J.D. Quigley). September 2019. [arXiv:1909.03920](https://arxiv.org/abs/1909.03920). Submitted to *Memoirs of the AMS*.
3. C_2 -equivariant stable homotopy from real motivic stable homotopy (with M. Behrens). August 2019. [arXiv:1908.08378](https://arxiv.org/abs/1908.08378). Submitted to the *Annals of K-Theory*.
4. Algorithmic canonical stratifications of simplicial complexes (with R. Asai). August 2018. [arXiv:1808.06568](https://arxiv.org/abs/1808.06568). Submitted to the *Journal of Pure and Applied Algebra*.
5. Parameterized higher category theory and higher algebra: Exposé II - Indexed homotopy limits and colimits. PhD thesis. [arXiv:1809.05892](https://arxiv.org/abs/1809.05892). Submitted to *Algebraic & Geometric Topology*.
6. Categorifying rationalization (with C. Barwick, S. Glasman, M. Hoyois, and D. Nardin). October 2016. [arXiv:1610.07162](https://arxiv.org/abs/1610.07162). Accepted for publication in *Forum of Mathematics, Sigma*.
7. Parameterized higher category theory and higher algebra: Exposé I - Elements of parameterized higher category theory (with C. Barwick, E. Dotto, S. Glasman, and D. Nardin). August 2016. [arXiv:1608.03657](https://arxiv.org/abs/1608.03657).
8. Parameterized higher category theory and higher algebra: a general introduction (with C. Barwick, E. Dotto, S. Glasman, and D. Nardin). August 2016. [arXiv:1608.03654](https://arxiv.org/abs/1608.03654).
9. Fibrations in ∞ -category theory (with C. Barwick). [arXiv:1607.04343](https://arxiv.org/abs/1607.04343). In *2016 MATRIX Annals*, pp. 17–42.
10. Spectral Mackey functors and equivariant algebraic K -theory (II) (with C. Barwick and S. Glasman). [arXiv:1505.03098](https://arxiv.org/abs/1505.03098). *Tunisian J. Math.* 2 (2020), no. 1, pp. 97–146.

Selected Lectures

Invited

- 2020 Feb. Wayne State (Topology seminar): TBA.
- 2019 Nov. UIUC (Topology seminar): Two theories of real cyclotomic spectra.
- 2019 Sep. Northwestern (Topology seminar): C_2 -equivariant stable homotopy from real motivic stable homotopy.
- 2019 Sep. Electronic Computational Homotopy Theory Seminar: C_2 -equivariant stable homotopy from real motivic stable homotopy.
- 2019 May Current Directions in Homotopical Algebra (at IBS Center for Geometry and Physics): The theory of real cyclotomic spectra.
- 2019 May MIT (Topology seminar): The genuine stabilization of a G -topos.
- 2019 Feb. Winter Midwest Topology Seminar (at UIUC): The genuine stabilization of a G -topos.
- 2019 Jan. Kyoto Workshop on Applied Topology: Algorithmic canonical stratifications of simplicial complexes.
- 2018 Oct. U. Illinois at Chicago (K -theory seminar): The genuine stabilization of a G -topos.
- 2018 Sep. U. Notre Dame (Topology seminar): Algorithmic canonical stratifications of simplicial complexes.
- 2018 May BIRS/CMO workshop on ∞ -categories, ∞ -operads, and their applications: The genuine stabilization of a G -topos.
- 2017 Sep. U. Notre Dame (Topology seminar): Parameterized higher category theory.
- 2017 July YTM Stockholm: The homotopy theory of spectral Mackey functors.
- 2017 May MIT (Topology seminar): Parameterized higher category theory.
- 2017 Jan. U. Copenhagen (Topology seminar): Parameterized higher category theory.
- 2016 Nov. U. Chicago (Topology seminar): Parameterized higher category theory.
- 2015 Dec. U. Glasgow (Workshop on equivariant stable homotopy theory and parameterized higher category theory): Stability and additivity in parametrized higher category theory.

Other talks

- 2018 Aug. USC K -theory summer school: Computation of slices of certain motivic spectra.
- 2018 Mar. Internal topology seminar at Notre Dame: Recollements of topoi arising from G -action.

Professional Activities

- 2016 Spring Organizer of the MIT ‘Juvitop’ topology learning seminar on the Kervaire invariant one problem and equivariant stable homotopy theory.
- 2015 Spring Co-organizer of the MIT Topology seminar (with H. Miller).

Teaching Activities

- 2019 Spring/Fall Lecturer for Linear Algebra and Differential Equations (20350)
- 2018 Fall Lecturer for Calculus A (10350)
- 2017/18 Fall/Spring Lecturer for Linear Algebra and Differential Equations (20350)
- 2016 Spring Recitation instructor for Differential Equations (18.03)
- 2015 Fall Recitation instructor for Honors Multivariable Calculus (18.022)
- 2015 Spring Recitation instructor for Linear Algebra (18.06)
- 2010/11 Summer Counselor in the University of Chicago Young Scholar’s Program. Taught number theory in 2010 and knot theory in 2011 to high-school students from the Chicago area.

References

- Clark Barwick, University of Edinburgh, Clark.Barwick@ed.ac.uk
- Mark Behrens, University of Notre Dame, mbehren1@nd.edu
- Marc Hoyois, University of Regensburg, marc.hoyois@gmail.com
- Stephan Stolz, University of Notre Dame, Stephan.A.Stolz.1@nd.edu (teaching)