

CONTACT	<a href="mailto:jay.wadekar@nyu.edu">jay.wadekar@nyu.edu</a>	<a href="#">Website</a>
EDUCATION	<p><b>New York University (NYU)</b> — New York, NY Ph.D. alongside MS &amp; M.Phil in Astrophysics</p> <p><b>Indian Institute of Technology, Bombay (IITB)</b>—Mumbai, India B.Tech (Bachelor of Technology) in Engineering Physics with Honors in Physics</p>	<p>May 2021 (expected) GPA: 3.89/4.0</p> <p>May 2015</p>
RESEARCH INTERESTS	<ul style="list-style-type: none"> <li>- Cosmology with galaxy and 21cm intensity mapping surveys: analytic covariance matrices</li> <li>- Neural networks, machine learning and cosmological hydrodynamic simulations</li> <li>- Dark matter phenomenology</li> </ul>	
PUBLICATIONS (PRIMARY CONTRIBUTOR/LEAD AUTHOR)	<p>Cosmological constraints from BOSS with analytic covariance matrices <i>D. Wadekar, M. Ivanov, R. Scoccimarro</i></p> <p>HInet: Generating neutral hydrogen from dark matter with neural networks <i>D. Wadekar, F. Villaescusa-Navarro, S. Ho, L. Perreault-Levasseur</i></p> <p>First astrophysical constraints on dark matter interactions with ordinary matter at very low velocities <i>D. Wadekar, G. Farrar</i></p> <p>The Galaxy Power Spectrum Multipoles Covariance in Perturbation Theory <i>D. Wadekar, R. Scoccimarro</i></p> <p>Comment on “Calorimetric Dark Matter Detection with Galactic Center Gas Clouds” <i>G. Farrar, F. Lockman, N. McClure-Griffiths, D. Wadekar*</i></p> <p>Zeldovich pancakes at redshift zero: the equilibration state and phase space properties. <i>D. Wadekar, S. Hansen</i> [arXiv:1411.6627]</p>	<p><a href="#">arXiv:2009.00622</a> Submitted to PRD</p> <p><a href="#">arXiv:2007.10340</a> Submitted to ApJ</p> <p><a href="#">arXiv:1903.12190</a> Submitted to PRL</p> <p><a href="#">arXiv:1910.02914</a> PRD, to appear (2020)</p> <p><a href="#">PRL</a> 124, 029001 (2020)</p> <p><a href="#">MNRAS</a> 447,1337 (2015)</p>
PUBLICATIONS (CO-AUTHOR)	<p>The CAMELS project: Cosmology and Astrophysics with Machine Learning Simulations <i>F. Villaescusa-Navarro et al. (incl. D. Wadekar)</i></p> <p>Variance Adaptation in Navigational Decision Making <i>R. Gepner, J. Wolk, D. Wadekar, S. Dvali, M. Gershow</i></p>	<p><a href="#">arXiv:2010.00619</a> Submitted to ApJ</p> <p><a href="#">eLife</a> (2018); 7:e37945</p>
MANUSCRIPTS IN PREPARATION	<p>Neutral hydrogen assembly bias with machine learning <i>D. Wadekar, F. Villaescusa-Navarro, S. Ho, L. Perreault-Levasseur</i></p>	<p><a href="#">arXiv:2010.xxxx</a></p>
SELECTED TALKS	<p>CCA lunch talk, Center for computational astrophysics, NY (<b>invited</b>)</p> <p>Princeton/IAS Cosmology lunch talk, Princeton, NJ (<b>invited</b>)</p> <p>Cosmology seminar, TIFR, Mumbai, India (<b>invited</b>)</p> <p>Cosmology seminar, UC Berkeley, CA (<b>invited</b>) [<a href="#">slides</a>]</p> <p>Workshop on dynamics of LSS formation, MIAPP, Garching, Germany (<b>invited</b>)</p> <p>Cosmology at home conference, (contributed) [<a href="#">video</a>]</p> <p>BCCP workshop: Spectroscopic surveys, UC Berkeley, CA (contributed)</p> <p>April Meeting of the American Physical Society (APS), Denver, CO (contributed):</p> <p>- received DAP travel award (600\$) &amp; DGRAV travel award (300\$)</p> <p>April Meeting of the American Physical Society (APS), Columbus, OH (contributed):</p> <p>- received DAP travel award (600\$)</p>	<p>August 2020</p> <p>December 2019</p> <p>December 2019</p> <p>October 2019</p> <p>July 2019</p> <p>August 2020</p> <p>January 2020</p> <p>April 2019</p> <p>April 2018</p>

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\* indicates alphabetical authorship

- AWARDS & HONORS**
- **James Arthur Dissertation Fellowship** at NYU, 2020 - current
  - **James Arthur Graduate Fellowship** at NYU, 2019 - 2020
  - **Henry Mitchell McCracken Fellowship** at NYU, 2015 - 2019
  - **All India Rank 139** in IIT-JEE 2011 exam (**99.97 percentile**) among 485,000 candidates.
  - **KVPY fellowship** (Kishore Vaigynaik Protsahan Yojana) by the Govt. of India (declined)
  - **NTSE fellowship** (National Talent Search Scholarship) by the Govt. of India.
  - Among **top 30** students selected from all over India to attend Orientation cum Selection Camp (OCSC) for International Olympiad on Astronomy and Astrophysics (IOAA) and International Junior Science Olympiad (IJSO), after clearing two nationwide examinations participated in by more than 15000 students.
- POSTERS**
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|--|--------------|
| Max Planck Institute for Astrophysics, Berlin, Germany | July 2018    |
| NYU, AMNH & CUNY Astrofest, NYU                        | October 2018 |
- COLLABORATIONS**
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|---|--------------|
| Member of the Dark Energy Spectroscopic Instrument (DESI) collaboration | 2019-current |
|---|--------------|
- TEACHING EXPERIENCE**
- Teaching Assistant(TA) at NYU for the undergraduate course Mathematical Physics *Spring 2018*
  - TA at NYU for the undergraduate course Electricity & Magnetism- I *Fall 2016*
  - TA at IITB for the undergraduate course Electromagnetism *Spring 2015*
- TECHNICAL SKILLS**
- *Programming:* C/C++, Python, Mathematica, FORTRAN77
  - *Operating Systems:* Linux, Windows, Mac
  - *Analysis Tools:* Pytorch, scikit-learn
- SERVICE**
- Referee for MNRAS
- MENTORSHIP AND OUTREACH**
- *Academic Mentorship:* Fall 2014  
Tutored academically weak students at IIT Bombay in complex analysis and differential equations. Mentored two students in the physics department and helped them in clearing their backlogs.
  - *Astronomy Club:* 2011-12  
Gave talks on future of astronomy at IIT Bombay to a general audience. I also headed a project in collaboration with the club to build a Solar Radio Telescope from scratch.
  - Completed science communication writing workshops at the NYU journalism institute and published a review on an upcoming popular science book [[link](#)].
- REFERENCES**
- |  |                                 |
|--|---------------------------------|
| • <i>Prof. Roman Scoccimarro</i> (PhD advisor) | rs123@nyu.edu                   |
| • <i>Prof. Glennys Farrar</i>                  | gf25@nyu.edu                    |
| • <i>Prof. Shirley Ho</i>                      | shirleyho@flatironinstitute.org |
| • <i>Prof. Steen H. Hansen</i>                 | hansen@dark-cosmology.dk        |
| • <i>Dr. Francisco Villaescusa-Navarro</i>     | fvillaescusa@princeton.edu      |
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