

# Aditya Vijaykumar

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| EMPLOYMENT          | <b>CITA Postdoctoral Fellow</b><br><b>Canadian Institute for Theoretical Astrophysics (CITA), Toronto</b><br><b>Graduate Student</b><br><b>International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru</b><br><b>Fulbright-Nehru Doctoral Research Fellow</b><br><b>Department of Physics, The University of Chicago</b>   | Sep 2023 - <i>Present</i><br>Aug 2018 - Aug 2023<br>Aug 2022 - Mar 2023 |
| EDUCATION           | <b>International Centre for Theoretical Sciences (ICTS-TIFR), Bengaluru</b><br>PhD in Physics. Mentor: Prof. Ajith Parameswaran.<br>Thesis Title: <i>Exploring gravity, astrophysics, and cosmology with gravitational waves</i><br><b>Birla Institute of Technology and Science (BITS), Pilani</b><br>M.Sc. (Hons.) Physics and B.E. (Hons.) Mechanical Engineering  | 2018 - 2023<br>2013 - 2018  |
| GRANTS AND AWARDS   | <ol style="list-style-type: none"><li><b>Justice Oak Award for Outstanding thesis in Astronomy 2024</b>, Astronomical Society of India (ASI)</li><li><b>V. V. Narlikar Best Thesis Award 2024</b>, Indian Association for General Relativity and Gravitation (IAGRG)</li><li><b>Fulbright-Nehru Doctoral Research Fellowship 2022</b>, US Department of State and Government of India</li><li><b>Co-PI, IndiaBioscience Outreach Grant 2022</b>, <i>Communicating Science Through Theatre</i>, (100,000 INR)</li><li><b>Graduate Fellowship 2018-2023</b>, ICTS-TIFR</li><li><b>S.N. Bhatt Memorial Excellence Fellowship 2018</b>, ICTS-TIFR</li><li><b>Summer Research Fellowship 2016</b>, Indian Academy of Sciences</li><li><b>INSPIRE-DST Scholarship for Higher Education 2013-2018</b>, Government of India</li></ol> |   |
| PUBLICATION SUMMARY | <b>NASA-ADS Library</b><br><b>25 short-author list papers</b> , including <b>18 as first/second author</b> .<br><b>6 LIGO-Virgo-KAGRA Collaboration papers</b> with significant contributions, including <b>1 as chair of the paper writing team</b>  |   |
| TALKS SUMMARY       | <b>9 invited conference talks</b><br><b>20 seminars</b><br><b>10 contributed talks</b>  |   |
| SELECTED SERVICE    | <b>LIGO-Virgo-KAGRA Collaboration</b> <ul style="list-style-type: none"><li>Paper writing team chair for the GWTC-4.0 populations paper</li><li>Parameter estimation study team lead for the GW231123 massive binary black hole</li><li>Developer of <code>bilby</code> and <code>bilby_pipe</code> software packages</li><li>Eccentric parameter estimation taskforce member</li><li>Low-latency parameter estimation expert rota</li></ul>  |   |

- Elected postdoctoral member, LIGO Academic Advisory Committee (LAAC)

***Journal Referee***

- Nature, Physical Review D, Astrophysical Journal Letters, Astrophysical Journal, Machine Learning: Science and Technology

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| INVITED<br>CONFERENCE<br>TALKS | 1. Gravitational Wave Physics and Astrophysics Workshop, Atlanta                    | December 2025  |
|                                | 2. The Lifecycle of Stellar Black Holes, KITP, Santa Barbara                        | November 2025  |
|                                | 3. Future of Gravitational Wave Astronomy, ICTS, Bengaluru                          | October 2025   |
|                                | 4. European Physical Society Conference on High Energy Physics, Marseille (virtual) | July 2025      |
|                                | 5. Scientific Machine Learning in Gravitational Wave Astronomy, ICERM, Providence   | June 2025      |
|                                | 6. Lyman Break Galaxies Workshop, Toronto   | May 2025       |
|                                | 7. PAX Meeting, London, UK (panelist)   | July 2024      |
|                                | 8. The Quest for Precision Gravitational-wave Cosmology, KICP, Chicago              | September 2022 |
|                                | 9. Second Chennai Symposium on Gravitation and Cosmology, Chennai (virtual)         | February 2022  |

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| LIST OF<br>SEMINARS | 1. Weinberg Institute Seminar, UT Austin                            | November 2025  |
|                     | 2. Astrophysics and Relativity Seminar, ICTS                        | July 2025      |
|                     | 3. TAPIR Seminar, Caltech   | March 2025     |
|                     | 4. Seminar, UCLA  | March 2025     |
|                     | 5. IGC seminar, Penn State University                               | October 2024   |
|                     | 6. Gravitational wave seminar, IUCAA                                | August 2024    |
|                     | 7. Gravity Exploration Institute seminar, Cardiff University        | July 2024      |
|                     | 8. CIERA seminar, Northwestern University                           | June 2024      |
|                     | 9. GRAPPA seminar, University of Amsterdam                          | May 2024       |
|                     | 10. Strong seminar, Niels Bohr Institute                            | April 2024     |
|                     | 11. CITA Seminar, University of Toronto                             | January 2024   |
|                     | 12. TASTY Seminar, University of Toronto                            | January 2024   |
|                     | 13. IUCAA gravitational wave seminar, Pune                          | July 2023      |
|                     | 14. Physics seminar, IISER Pune                                     | July 2023      |
|                     | 15. Physics seminar, IIT Gandhinagar                                | June 2023      |
|                     | 16. Gravitational wave seminar, Seoul National University (virtual) | October 2022   |
|                     | 17. IGC seminar, Penn State University                              | August 2022    |
|                     | 18. Lorentz Institute seminar, Leiden (virtual)                     | June 2020      |
|                     | 19. IUCAA gravitational wave seminar, Pune                          | September 2019 |
|                     | 20. Albert Einstein Institute seminar, Hannover                     | July 2019      |

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| CONTRIBUTED TALKS | 1. APS Meeting, Anaheim, CA  | March 2025                |
|                   | 2. Midwest Relativity Meeting, Ann Arbor, MI   | November 2024             |
|                   | 3. CASCA Meeting, Toronto  | June 2024                 |
|                   | 4. Gravitational waves: A new ear on the chemistry of galaxies, Leiden   | April 2024                |
|                   | 5. Globular Clusters and their Tidal Tails, Toronto  | May 2024                  |
|                   | 6. Joint CITA-PI Gravitational waves meeting   | October 2023              |
|                   | 7. Pune-Mumbai Cosmology Meeting   | August 2023               |
|                   | 8. ICTS In-house Symposium, Bengaluru  | February 2020             |
|                   | 9. International Conference on Gravitation & Cosmology, Mohali   | December 2019             |
|                   | 10. GR22 and Amaldi13, Valencia  | July 2019                 |
| MENTORSHIP        | 1. Sarah Han (University of Toronto)   | May 2025 - <i>Present</i> |
|                   | 2. Cissy Kuang (University of Toronto)   | May 2025 - <i>Present</i> |
|                   | 3. Ben Stadel (University of Alberta)  | May 2024 - <i>Present</i> |
|                   | 4. Avinash Tiwari (IUCAA, Pune)  | May 2023 - <i>Present</i> |
|                   | 5. Kaustubh Gupta (IISER, Pune → Swinburne University)   | May 2022 - May 2023       |
|                   | 6. Adhrit Ravichandran (IIT Roorkee → UMass Dartmouth)   | Sep 2021 - Aug 2022       |
|                   | 7. Kruthi Krishna (IISc → Radboud University)  | Sep 2020 - Aug 2021       |
|                   | 8. Harsh Narola (IISER, Tirupati → Utrecht University)   | Sep 2020 - Aug 2021       |
| TEACHING          | <ul style="list-style-type: none"> <li>• Instructor and organizer, <b>LIGO-Virgo Collaboration Gravitational-Wave Open Data Workshop #5 and #6</b> at ICTS.</li> <li>• Tutor for the <b>Numerical Relativity</b> graduate course, ICTS, Jan-April 2022.</li> <li>• Co-organizer and tutor, <b>ICTS Workshop on Parameter Estimation with bilby</b>, ICTS, Bengaluru, India, August 2020 (Online)</li> <li>• Tutor, <b>Light and Beyond—Summer Course for Undergraduate Students by Prof. Rajaram Nityananda</b>, June 2020 (Online)</li> <li>• Tutor, <b>LIGO-Virgo Collaboration Gravitational-Wave Open Data Workshop #3</b>, May 2020 (Online)</li> <li>• Tutor for the following mini-courses, <b>ICTS Summer Schools on Gravitational Wave Astronomy</b>, ICTS, Bengaluru, India: <ul style="list-style-type: none"> <li>1. <i>Compact binary evolution, rates and population modelling</i>, June 2022.</li> <li>2. <i>Astrophysical Stochastic GW Foreground</i>, July 2021.</li> <li>3. <i>Numerical Hydrodynamics</i>, May 2020.</li> <li>4. <i>Advanced General Relativity</i>, July 2019.</li> </ul> </li> </ul> |                           |
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## OUTREACH

- Interactive session with school students, The Academy School, Pune, August 2025.
- Talk on gravitational-wave astronomy, ASX Symposium, University of Toronto, March 2025.
- Talk on gravitational-wave astronomy, University of Toronto Undergraduate Astronomy Union Seminar, November 2024.
- Co-PI of the *IndiaBioscience Outreach Grant* to communicate science using stage theatre.
- Panelist at the *Bengaluru: The Astronomy City*, a Q&A event organized for **National Science Day**, February 2022.
- Mediator for the **Contagion Exhibition**, Science Gallery Bengaluru, April-July 2021.
- Moderated a discussion with Prof. Smitha Vishveshwara on her collaborative science theatre project *Quantum Voyages* as a part of **Cosmic Zoom Online Exhibition**, April 2021
- Articles on the **ICTS blog**:
  1. **A Conversation with ICTS Scientists Studying the Indian Monsoon**, November 2019
  2. **Summer School on Gravitational Wave Astronomy**, November 2019
- Talk titled *The Whats, Whys and Hows of Gravitational-wave Astronomy*, **BMS College of Engineering, Bengaluru**, November 2019
- Talk titled *Gravitational Waves - A New Tool for Cosmology!* at **Vigyan Samagam**, Visvesvaraya Industrial and Technological Museum, Bengaluru, India, August 2019
- Biweekly interactive outreach sessions in rural primary schools, 2019

## REFERENCES

1. Prof. Maya Fishbach, CITA, [fishbach@cita.utoronto.ca](mailto:fishbach@cita.utoronto.ca)
2. Prof. Parameswaran Ajith, ICTS-TIFR, [ajith@icts.res.in](mailto:ajith@icts.res.in)
3. Prof. Daniel E. Holz, The University of Chicago, [holz@uchicago.edu](mailto:holz@uchicago.edu)
4. Prof. Benjamin Farr, University of Oregon, [bfarr@uoregon.edu](mailto:bfarr@uoregon.edu)
5. Prof. Shasvath J. Kapadia, IUCAA, [shasvath.kapadia@iucaa.in](mailto:shasvath.kapadia@iucaa.in)