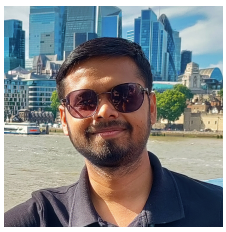
Avinash Tiwari, Ph.D. Student

itsmeavinasht@gmail.com
avinash.tiwari@iucaa.in
avinash-tiwari
https://avinash-tiwari-at.github.io/
0000-0001-7197-8899



Current Affiliations

2021 – · · · · Inter-University Centre for Astronomy and Astrophysics, Pune.
2022 – · · · · LIGO-Virgo-Kagra (LVK) Collaboration and LIGO-India Scientific Collaboration (LISC).

Past Affiliations

2021 – 2021 Indian Institute of Astrophysics, Bengaluru.
2019 – 2021 Indian Institute of Technology Guwahati, Guwahati.
2016 – 2019 University of Allahabad, Prayagraj.

Education

2021 – · · · · **Ph.D.**, Inter-University Centre for Astronomy and Astrophysics, Pune.
2019 – 2021 **M.Sc. Physics**, Indian Institute of Technology Guwahati, Guwahati.
2016 – 2019 **B.Sc. Physics, Mathematics, and Computer Science**, University of Allahabad, Prayagraj.

Skills

Languages Hindi, English, and Awadhi.
Coding Python, C, LaTeX.
Web Dev HTML, CSS, GitHub Pages.
Packages Bilby, Bilby_pipe, Bilby_tgr, Gwpopulation, EMCEE, Dynesty.

Participations, Awards, and Achievements

- **Graduate Aptitude Test in Engineering** (GATE 2021): All India Rank 209 in Physics.
- **Junior Research Fellowship** (JRF)-CSIR: All India Rank 89 in Physical Sciences, Joint CSIR - UGC NET JUNE 2020 (held in November 2020).
- **IASC** (November 9 – December 4, 2020): Member of the team "Delhi University" in the "DST-Rajasthan Asteroid Search Campaign" organised by DST-Rajasthan in collaboration with the International Astronomical Search Collaboration (IASC).
- **IASC** (August 12 – September 8, 2020): member of the team "IIT Guwahati" in the "DST-Rajasthan Asteroid Search Campaign" organised by DST-Rajasthan in collaboration with the International Astronomical Search Collaboration (IASC).
- **Institute Merit-cum-Means** (McM) Scholarship: awarded in both years of M.Sc. (2019-21) by the India Institute of Technology Guwahati on merit-cum-means basis for being in the top 25%.
- **Joint Admission Test for M.Sc.** (JAM) 2019: All India Rank 236 in Physics.

Workshops and Seminars

- **Last Friday Talks at IUCAA** on Sept 27, 2024: "Profiling stellar environments of gravitational wave sources".
- **AEI Colloquium** (Aug 22, 2024): "Profiling stellar environments of gravitational wave sources".
- **New ideas on the ORIGIN of BLACK HOLE MERGERS** (Aug 12 – Aug 16, 2024), NBI Copenhagen: "Talk on Profiling stellar environments of gravitational wave sources".
- **Last Friday Talks at IUCAA** on July 28, 2023: "Probing globular clusters and other astrophysical environments with gravitational waves emitted by accelerated compact binary mergers".
- **LUNAR GRAVITATIONAL-WAVE DETECTION**: 17 April 2023 to 20 April 2023, Ramanujan Lecture Hall, ICTS Bengaluru.
- **Last Friday Talks at IUCAA** on March 31, 2023: "Waltzing binaries: probing line-of-sight acceleration of merging compact objects with gravitational waves".
- **Online Seminar at ICTS**, Bengaluru on December 15, 2022: "Waltzing binaries: probing line-of-sight acceleration of merging compact objects with gravitational waves".

Research Publications

Short author works

1. A. Tiwari, P. Chanda, S. J. Kapadia, S. Adhikari, A. Vijaykumar, and B. Dasgupta, "Profiling Dark Matter Spikes with Gravitational Waves from Accelerated Binaries," Aug. 2025. arXiv: 2508.03803 [hep-ph].
2. A. Tiwari, A. Vijaykumar, S. J. Kapadia, S. Ghosh, and A. B. Nielsen, "A pipeline to search for signatures of line-of-sight acceleration in gravitational wave signals produced by compact binary coalescences," Jun. 2025. arXiv: 2506.22272 [astro-ph.HE].
3. A. Tiwari, A. Vijaykumar, S. J. Kapadia, S. Chatterjee, and G. Fragione, "Profiling stellar environments of gravitational wave sources," Jul. 2024. arXiv: 2407.15117 [astro-ph.HE].
4. A. Tiwari, A. Vijaykumar, S. J. Kapadia, G. Fragione, and S. Chatterjee, "Accelerated binary black holes in globular clusters: forecasts and detectability in the era of space-based gravitational-wave detectors," *Mon. Not. Roy. Astron. Soc.*, vol. 527, no. 3, pp. 8586–8597, 2023. DOI: 10.1093/mnras/stad3749. arXiv: 2307.00930 [astro-ph.HE].
5. A. Vijaykumar, A. Tiwari, S. J. Kapadia, K. G. Arun, and P. Ajith, "Waltzing Binaries: Probing the Line-of-sight Acceleration of Merging Compact Objects with Gravitational Waves," *Astrophys. J.*, vol. 954, no. 1, p. 105, 2023. DOI: 10.3847/1538-4357/acd77d. arXiv: 2302.09651 [astro-ph.HE].