RAGHAV GIRGAONKAR

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0000-0002-4678-2939 RaghavGirgaonkar

EDUCATION

Ph.D. Physics, The University of Wisconsin-Milwaukee — Present

MS Physics, The University of Texas Rio Grande Valley — 2024
MS thesis: *Mitigation Methods for Instrumental Artifacts in Gravitational Wave Data*

B.Tech Engg Physics and Electrical Engg Double Major
Indian Institute of Technology, Hyderabad — 2021
B.Tech thesis: *Pulsar Timing Arrays and the Indian Pulsar Timing Array Project*

WORK EXPERIENCE

Graduate Research and Teaching Assistant at UW-Milwaukee — 08/2024 – Present
Adviser: David Kaplan

Graduate Research Assistant at the University of Texas Rio Grande Valley — 08/2022 – 05/2024
Adviser: Soumya D. Mohanty

Amity-Berkeley SETI Junior Research Fellowship — 11/2021 – 05/2022
Adviser: Vishal Gajjar (UC Berkeley)

Undergraduate Student Researcher at the Indian Pulsar Timing Array (InPTA) Consortium
07/2019 – 05/2022 Advisers: Bhal Chandra Joshi (NCRA) and Shantanu Desai (IIT Hyderabad)

Project Intern at the Inter University Center for Astronomy and Astrophysics (IUCAA) — 2019
Advisers: Joydeep Bagchi and Jameer Manur (Radio Physics Lab, IUCAA)

AWARDS AND SCHOLARSHIPS

Outstanding Thesis in Physics Award — 2024
TACCSTER Travel and Participation Award — 2023
MITACS Globalink Research Fellowship[1] — 2020

TECHNICAL SKILLS

Computer Languages	Python, Bash scripting, MATLAB, LaTeX, C
Operating Systems	Linux, Windows, macOS
Other Software	Git, Microsoft Office

[1] *Cancelled due to the COVID 19 Pandemic*

CONFERENCE / RESEARCH SUPPORT GRANTS

UW-Milwaukee and University of Sydney Conference Travel Support	2025
CyberInfrastructure Comprehensive, Applied and Tangible Summer School (CIberCATSS), UWM	2025
Society of Physics Students Conference Travel Support	2023
NSF SWEETER #1925764 Travel Support	2023
NSF Educational Travel Support: *A Stellar Student Experience*	2023
Penn State SETI Symposium 2023 Travel Support	2023
NSF PHY-2207935 Graduate Research Award	2022-2024
Breakthrough Listen Conference Travel Support	2022

REFEREED JOURNAL PUBLICATIONS

Arranged latest to oldest.

1. **Girgaonkar, R** and Mohanty, S, *Glitch Veto based on Unphysical Gravitational Wave Binary Inspiral Templates*, 2024 Phys. Rev. D 110, 023037

2. Srivastava, A et al. (31 authors including **Girgaonkar, R.**), *Noise analysis of the Indian Pulsar Timing Array data release I* , 2023 Phys. Rev. D 108, 023008.

3. Tarafdar, P et al. (38 authors including **Girgaonkar, R.**), *The Indian Pulsar Timing Array: First data release*, PASA 2022 39.

4. Joshi B. C., et al. (37 authors including **Girgaonkar, R.**) *Nanohertz Gravitational Wave Astronomy during the SKA Era: An InPTA perspective:*, 2022 JoAA

5. K Nobleson, et al. (32 authors including **Girgaonkar, R.**) *Low-frequency wideband timing of InPTA pulsars observed with the uGMRT*, MNRAS 2022 512

6. Singha, J, et al. (33 authors including **Girgaonkar, R.**), *Evidence for profile changes in PSR J1713+0747 using the uGMRT*, MNRAS 2021 507.

7. M.A. Krishnakumar, et al. (22 authors including **Girgaonkar, R.**), *High Precision Measurements of Interstellar Dispersion Measure with the upgraded GMRT*, A&A 2021 651 A5

8. Susobhanan, A et al., (23 authors including **Girgaonkar, R.**), *pinta: The uGMRT Data Processing Pipeline for the Indian Pulsar Timing Array*, PASA 2021 12

ACADEMIC PRESENTATIONS

Conference Talks

The Dynamic Radio Sky Conference, Sydney 2025
Revisiting Extreme Active Scintillators using ASKAP

APS/AAPT Texas Section Meeting 2023 2023
NSPECKT: A Non-Parametric Change Point Detector for Gravitational Wave Data

Platform Talk TACCSTER 2023 2023
Efficient Glitch Detection in Gravitational Wave Data using Particle Swarm Optimization

Invited Talk AMD HPC Users Forum 2023
Efficient Glitch Detection in Gravitational Wave Data using Particle Swarm Optimization

The Penn State SETI Symposium 2023
SETI India: A Search for Technosignatures with the uGMRT

The College of Sciences Annual Research Conference, UTRGV 2023
Effect of Alternative Model Parameters on Gravitational-Wave Searches

Undergraduate Physics Symposium, Presidency University, Kolkata 2021
High precision measurements of interstellar dispersion measure with the upgraded GMRT

Posters

TACCSTER 2023 2023
Efficient Non-Stationarity Detection in Gravitational Wave Data

Annual Meet of the Astronomical Society of India 2022
SETI India: Using uGMRT to search for advanced extraterrestrial life

COMPETITIVELY AWARDED ALLOCATIONS

Observing Proposals (as PI)

1. MeerKAT Followup of an unusual flaring transient. (DDT-20251007-RG-01, Oct 2025) (**10 hrs.**)
2. ASKAP Followup of an Active Scintillator Field. (AS113_100, Nov 2025) (**10 hrs.**)

Observing Proposals (as Co-PI)

1. Gemini Fast-turnaround follow up of an unusual radio flaring transient (GS-2025B-FT-208/science, Oct 2025) (**1.76 hrs.**)

The Giant Metrewave Radio Telescope:

1. 38_014 Indian Pulsar Timing Array (InPTA) experiment using the upgraded wideband GMRT and the ORT: 2020 Update (**96 hrs.**)
2. 39_013 Indian Pulsar Timing Array (InPTA) experiment using the upgraded wideband GMRT: 2020 Second Update (**112 hrs.**)
3. 40_012 Indian Pulsar Timing Array (InPTA) experiment using the upgraded wideband GMRT: 2021 Update (**208 hrs.**)
4. 41_023 Indian Pulsar Timing Array (InPTA) experiment using the upgraded wideband GMRT: Update (**208 hrs.**)
5. 42_006 Indian Pulsar Timing Array (InPTA) experiment using the upgraded wideband GMRT: Update (**208 hrs.**)
6. ddtC199 Continued high cadence follow up of a transient event in PSR J1713+0747 (**15 hrs.**)
7. 42_025 Target of opportunity proposal for monitoring pulse-shape changes in the International Pulsar Timing Array pulsar sample (**20 hrs.**)
8. ddtC226 A pilot exploratory proposal for a search for advanced extraterrestrial life with the uGMRT (**3 hrs.**)
9. 43_015 Target of opportunity proposal for monitoring pulse-shape changes in the International Pulsar

Timing Array pulsar sample (**10 hrs.**)

10. 43_020 Indian Pulsar Timing Array (InPTA) experiment using the upgraded wideband GMRT: Update July 2022 (**208 hrs.**)
11. 44_031 Target of opportunity proposal for monitoring pulse-shape changes in the International Pulsar Timing Array pulsar sample (**20 hrs.**)

Supercomputing Proposals (as Project Member)

Texas Advanced Computing Center (TACC): LoneStar6 allocations PHY21049: Gravitational Wave Data Analysis Algorithm Development (**9000 hrs.**)

MEMBER AFFILIATIONS

Active

Student member, Society of Physics Students 2023 – 2024

Student member, The Astronomical Society of India 2022 – Present

Past

Member, Indian Pulsar Timing Array Consortium 2019 – 2023

REFERENCES

David Kaplan
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University of Wisconsin-Milwaukee
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Shantanu Desai
Associate Professor, Department of Physics
The Indian Institute of Technology, Hyderabad
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Soumya D. Mohanty
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The University of Texas Rio Grande Valley
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Vishal Gajjar
Staff Astronomer, Department of Astronomy
University of California, Berkeley
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