Vishal Gajjar

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Research Interest

Search for Intelligent life in the Universe; Pulsars; Magnetars; Fast Radio Burst; Radio Transients; Large-scale surveys; Machine Learning; Digital instrumentation for radio astronomy

Work experience

Staff Astronomer, SETI Institute, Mountain View, USA, 2023 – current
Visiting Scholar, Breakthrough Listen, UC Berkeley, USA, 2023 – current
Academic Researcher, Breakthrough Listen, UC Berkeley, USA, 2021 – 2023
Post-doctoral Researcher, Breakthrough Listen, UC Berkeley, USA, 2018 – 2021
Templeton Fellow, Space Science Lab, UC Berkeley, USA, 2016 – 2018
West-light Fellow, Xinjiang Astronomical observatory, China, 2014 – 2016

Education

Doctor of Philosophy (Physics), TIFR, Mumbai, India, 2014
Master of Science (Physics Major), TIFR, Mumbai, India, 2009
Bachelor of Engineering (Electronics and Communication), S. S. Engineering College, Bhavnagar University, Bhavnagar, India, 2005

Publication Record

I am author and co-author of **133 publications** (62 refereed journals), with more than 3000 citations and an **h-index of 26** including **six** publications in **Nature** and **Nature Astronomy**. A full list of my publications can be found at NASA ADS

Current Grants

PI: Project TARANG, 2025–2027 ($450,000 USD)
PI: ARISE: Developing SETI-focused curriculum, 2024–2025 ($194,000 USD)
PI: STRIDE Grant for Technosignature, 2024 ($70,000 USD)
PI: Breakthrough Listen sub-award at SETI Institute, 2025–2026 ($600,000 USD)

Previous Grants

PI: Breakthrough Listen sub-award at SETI Institute, 2024–2025 ($400,000 USD)
PI: ARISE: Developing SETI-focused curriculum, 2024–2025 ($94,000 USD)
co-PI: West-Light Funding, Chinese Academy of Science, China, 2014–2016 ($30,000 USD)

Fellowships and Awards

Templeton post-doctoral fellow, UC Berkeley, USA, 2016 - 2018 ($200,000 USD)
Young Scientist Award, URSI, Istanbul, Turkey, 2014 ($2000 USD)
IAU Grant to attend the General assembly in Beijing, China, 2012 ($3000 USD)
Senior Research Fellowship at the NCRA, India, 2009-2014 ($20,000 USD)
ASTRON summer school, Dwingeloo, Neatherlands, 2010 ($3000 USD)
Junior Research Fellowship at the NCRA, India, 2007-2009 ($2500 USD)

Media coverage

Press Conference
Panel member and speaker for a press conference on *Peering Deeper Into the Lair of the Repeating Fast Radio Burst* at the **231st American Astronomical Society** meeting, Washington DC, USA, 2018.
Other Media activities (see gajjarvishal.com)
CNN, BBC, CBS, KRON4, CNET, space.com, Times of India, National Geographic, Forbes, Newsweek, Huffpost, Telegraph, The guardian, New Scientist, Gizmodo, Smithsonian.com, The Independent and many more (>60) media appearances.

Selected Academic Services

National Level Grant Reviewer
Expert reviewer for multi-year National Research Grant, Poland, 2021
Panel Member of NSF AST proposal review, Washington DC, USA, 2019
Invited Panel Member of NSF AST proposal review, Washington DC, USA, 2023
Invited Panel Member of NSF AST proposal review, Washington DC, USA, 2024
Editorial board memberships
Frontiers in Astronomy and Space Sciences, 2023
Acta Astronautica, Elsevier, 2024
Journal Reviewer
ApJ; ApJ Letters; MNRAS; Astrophysics and Space Science
Scientific Organizing Committee memberships
Penn State University SETI symposium, Penn State University, PA, USA, 2022
COSPAR 2020, Sydney, Australia, 2020
Annual science day, GMRT, India, 2009 – 2011
13^{th} *Young Astronomers meet*, Physical Research Laboratory, Ahmadabad, India, 2010
Telescope Time Proposal Reviewer
GMRT; ASTROSAT
Organizer of weekly SETI meeting at the Department of Astronomy, UC Berkeley, 2016 – 2019
35+ Recommendation letters written for graduate and undergraduate students

Instrumentation and Commissioning

Lead real-time multi-beam commensal transient detection system at FAST, China
Lead the commissioning of high-time resolution and polarization capabilities for Breakthrough Listen digital instrument at the GBT, USA
Lead transient detection pipeline development for BL program (SPANDAK) utilizing ML candidate verification
Co-lead the commissioning of BL digital hardware at e-MERLIN/JBO, UK
Lead for the full refurbishing and commissioning operation of 4-meter dish antenna for radio astronomy school, NCRA, Pune, India
Lead the commissioning of BL digital hardware at International LOFAR stations at Ireland and Sweden

Observation Experience

More than **400 hours** of combined observing experience with the Green Bank Telescope (USA), the Parkes radio telescopes (Australia), Sardinia Radio Telescope (Italy), and the Giant Meterwave Radio Telescope (India)
PI and Co-PI of 10 accepted observing proposals with the Giant Meterwave Radio Telescope (India)
PI and Co-PI of six accepted observing proposals with the Green Bank Radio Telescope (USA)

Mentoring

Current Graduate students
Perez, Karen, PhD Candidate University of Columbia, USA, 2019 - current
Owen Johnson, Trinity College, Dublin, Ireland, 2022 – current
Previous Graduate students
Suresh, Akshay, PhD Candidate, Cornell University, Ithica, NY, USA, 2021 - 2023
Zhang, Yunfan G., PhD Candidate UC Berkeley, USA, 2017-2018
Li, Shiyu, PhD Candidate, NAOC, China, 2017-2018
Niu, Chen-hui, PhD Candidate, CAS, China, 2017-2018
Wen, Zhi-Gong, Staff XAO, China, 2014-2016
Mentored undergraduate students : 20

Publications in *Nature*

Snelders, M. P.; Nimmo, K.; Hessels, J. W. T.; (6 co-authors); **Gajjar, V.**; 2023
Nature Astronomy, 7, 1486
Detection of ultra-fast radio bursts from FRB 20121102A

Peter X. Ma.; Cherry Ng; Leandro R.; (6 co-authors); **Gajjar, V.** et al. 2022
Nature Astronomy, 7, 492
The first deep-learning search for technosignatures of 820 nearby stars

Li, D.; (12 authors); **Gajjar, V.**; (18 authors), 2021
Nature 598, 267
A bimodal burst energy distribution of a repeating fast radio burst source

Michilli, D.; Seymour, A.; Hessels, J. W. T.; Spitler, L. G.; **Gajjar, V.**; (29 authors), 2018
Nature, 553, 182
An extreme magneto-ionic environment associated with the fast radio burst source FRB 121102

Sheikh, S.; (6 authors); **Gajjar, V.**; (10 authors), 2021
Nature Astronomy, 5, 1153
Analysis of the Breakthrough Listen signal of interest blc1 with a technosignature verification framework

Smith, S.; (5 authors); **Gajjar, V.**; (10 authors), 2021
Nature Astronomy, 5, 1148
A radio technosignature search towards Proxima Centauri resulting in a signal-of-interest

All Publications

Total: 134,
Refereed: 64
h-index: 28
Full list available here