# Pavan A. Uttarkar

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## Education

Feb 2022 – Feb 2025 — **Ph.D., Swinburne University of Technology (SUT)** on fast radio bursts (FRBs)
Thesis title: *Probing the progenitor environments of fast radio bursts.*
Expected submission: February 2025

Aug 2015 – Aug 2019 — **Bachelor of Engineering, Siddaganga Institute of Technology (SIT)** in Electronics and Instrumentation.
Thesis title: *Design and implementation of low-frequency observational setup.*

## Research experiences

Jan 2019 - Dec 2021 — **Visiting student program (VSP):**

- Design and implementation of low-frequency observational setup.
- Software correlator for the sky watch network array (SWAN) demonstration system.

May 2018 - Aug 2018 — **IASc-INSA-NASI Summer Research Fellow 2018:** Radio imaging using Sky watch network array (SWAN) demonstration system, Raman Research Institute (RRI), Bengaluru, India.

May 2017 - July 2018 — **IASc-INSA-NASI Summer Research Fellow 2017:** Pulsar timing with GMRT, National Centre for Radio Astrophysics (NCRA), Pune, India.

## Research Publications

### Journal Articles

1. *Shannon, R. M., K. W. Bannister, A. Bera, S. Bhandari, C. K. Day, A. T. Deller, T. Dial, D. Dobie, R. D. Ekers, W. -f. Fong, M. Glowacki, A. C. Gordon, K. Gourdji, A. Jaini, C. W. James, P. Kumar, E. K. Mahony, L. Marnoch, A. R. Muller, J. X. Prochaska, H. Qiu, S. D. Ryder, E. M. Sadler, D. R. Scott, N. Tejos, **Uttarkar, P. A.**, and Y. Wang. "The Commensal Real-time ASKAP Fast Transient incoherent-sum survey". *arXiv e-prints*, Aug. 2024, arXiv:2408.02083. *arXiv*, arxiv.org/abs/2408.02083, https://doi.org/10.48550/arXiv.2408.02083.

2. *Wang, Z., K. W. Bannister, V. Gupta, X. Deng, M. Pilawa, J. Tuthill, J. D. Bunton, C. Flynn, M. Glowacki, A. Jaini, Y. W. J. Lee, E. Lenc, J. Lucero, A. Paek, R. Radhakrishnan, N. Thyagarajan, **Uttarkar, P.**, Y. Wang, N. D. R. Bhat, C. W. James, V. A. Moss, Tara Murphy, J. E. Reynolds, R. M. Shannon, L. G. Spitler, A. Tzioumis, M. Caleb, A. T. Deller, A. C. Gordon, L. Marnoch, S. D. Ryder, S. Simha, C. S. Anderson, L. Ball, D. Brodrick, F. R. Cooray, N. Gupta, D. B. Hayman, A. Ng, S. E. Pearce, C. Phillips, M. A. Voronkov, and T. Westmeier. "The CRAFT Coherent (CRACO) upgrade I: System Description and Results of the 110-ms Radio Transient Pilot Survey". *arXiv e-prints*, Sept. 2024, arXiv:2409.10316. *arXiv*, arxiv.org/abs/2409.10316, https://doi.org/10.48550/arXiv.2409.10316.

3. **Uttarkar, Pavan**, Ryan M. Shannon, Marcus E. Lower, Pravir Kumar, Danny C. Price, A. T. Deller, and K. Gourdji. "Towards solving the origin of circular polarisation in FRB 20180301A". *arXiv e-prints*, May 2024, arXiv:2405.11515. *arXiv*, arxiv.org/abs/2405.11515, https://doi.org/10.48550/arXiv.2405.11515.

4 **Uttarkar, Pavan A.**, R. M. Shannon, K. Gourdji, A. T. Deller, C. K. Day, and S. Bhandari. "Searching for the spectral depolarization of ASKAP one-off FRB sources"., vol. 527, no. 2, Jan. 2024, pp. 4285–96. https://doi.org/10.1093/mnras/stad3437.

5 *Kumar, Pravir, Rui Luo, Danny C. Price, Ryan M. Shannon, Adam T. Deller, Shivani Bhandari, Yi Feng, Chris Flynn, Jinchen Jiang, **Uttarkar, Pavan A.**, Shuangqiang Wang, and Songbo Zhang. "Spectropolarimetric variability in the repeating fast radio burst source FRB 20180301A". *arXiv e-prints*, Apr. 2023, arXiv:2304.01763. *arXiv*, arxiv.org/abs/2304.01763, https://doi.org/10.48550/arXiv.2304.01763.

* co-authored papers.

## Conference talks and workshops

Contributed talk FRB 2024 (Thailand): **A burst cyclone in technicolor.**

Contributed talk FRB 2023 (online): **Probing progenitor environments of FRBs using polarimetric properties.**

Radio School 2023: **Australia National Telescope Facility Radio School 2023, ATCA, Narrabri**

Astronomy Winter School (online): **The 2nd NCTS/UCAT/NTHU International Astronomy Winter School**

Orange pulsar meeting 2022: **Searching for the spectral depolarization of ASKAP one-off FRB sources**

Contributed talk IAUGA 2022 (online): **Spectral depolarisation of one-off ASKAP FRBs.**

NRAO Summer School 2022 (online): **18th NRAO Synthesis Imaging Summer School**

## Skills

Coding (proficient): Python, LaTeX, FORTRAN

Coding (intermediate): C, C++

Coding (basic): VHDL, CUDA

Misc.: CASA, Miriad, psrchive, tempo2

Languages: English, Kannada, Marathi, Hindi, and Sanskrith

## Telescope proposals

GBT25A-240 (PI, regular proposal) **GBT - Solving an enigmatic long-period pulsar through timing and spectro-polarimetry**

P1345 (CoI, regular proposal) **Murriyang - Follow up of rotating radio transients discovered in ASKAP CRACO**

P1343 (PI, regular proposal) **Murriyang - Triggered wideband follow-up of repeating FRBs discovered by ASKAP-CRACO**

P1344 (PI, regular proposal) **Murriyang - Wideband spectro-polarimetric follow up of ASKAP-CRACO FRBs**

P1338 (PI, regular proposal) **Murriyang - Chasing the burst hurricane from FRB 20240114A**

PX129 (CoI, ToO) **Murriyang - ASKAP-CRACO FRB 230216 Follow-up**

## Telescope proposals (continued)

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| PX127 (PI, ToO) | **Murriyang - High-resolution FRB20240114A Follow-up** |
| PX125 (PI, ToO) | **Murriyang - ASKAP FRB 20230526A Follow-up** |
| P1328 (PI, regular proposal) | **Murriyang - Studying wideband spectro-polarimetric behaviour of FRB 20180301A** |
| PX114 (PI, ToO) | **Murriyang - ASKAP FRB discovery Follow-up** |
| PX107 (PI, ToO) | **Murriyang - Commissioning observations for CRACO** |
| PX101 (PI, ToO) | **Murriyang - Wideband follow-up of CHIME repeater FRB 20201130A.** |
| P1158 (PI, regular proposal) | **Murriyang - Probing the enigmatic environment of FRB20201124A with broadband observations** |
| P1198 (CoI, regular proposal) | **Murriyang - Capturing a Galactic fast radio burst analogue** |

## References


**Prof. Ryan Shannon**
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**Prof. Adam Deller**
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