SIC 402, KRESIT, IIT Bombay
sarveshgharat19@gmail.com

Sarvesh Gharat

Website
Google Scholar
Researchgate

Education

Ph.D., Indian Institute of Technology Bombay, GPA: 8.80/10.00 **July 2022–**
Bachelor of Technology, Vishwakarma Institute of Information Technology, GPA: 9.29/10.00 **June 2022**
Higher Secondary Certificate, Jai Hind College, Percentage: 80.15/100 **July 2018**
Secondary School Certificate, UES Uran, Percentage: 87.20/100 **July 2016**

Bachelor's Thesis

Extraction of Refractive Index from Optically Thin Samples **(At TIFR Mumbai) Jan 2022 — June 2022**

- Responsible to design an optimization algorithm to predict the refractive index of unknown materials using Terahertz Time Domain Spectroscopy.
- Implemented multiple optimization algorithms such as Dual Annealing, SHGO, Newton Raphson, etc
- Provided a full-fledged Python library that can be used for educational as well as research purposes

In Review

- Mistry, P., Prasad, A., Maity, M., Pathak, K, **Gharat, S.**, Lekkas, G., Bhattarai, S., Kumar, D., Lissauer, J., Twicken, J., et. al. VaTEST III: Validation of 8 Potential Super-Earths from TESS Data
- Bhatta, G., **Gharat, S.**, Borthakur, A. and Kumar, A. Gamma-ray Blazar Classification using Machine Learning with Advanced Weight Initialization and Self-Supervised Learning Techniques

Publications

- **Gharat, S.**, Borthakur, A. and Bhatta, G. Estimation of redshift and associated uncertainty of Fermi/LAT extra-galactic sources with Deep Learning. Monthly Notices of the Royal Astronomical Society, 527(3), pp.6198–6210
- **Gharat, S.**, Bose, B., Borthakur, A. and Mazumder R., 2022. An Image Processing approach to identify solar plages observed at 393.37 nm by the Kodaikanal Solar Observatory. RAS Techniques and Instruments, 2(1), pp.393-397
- Mistry, P., Pathak, K., Prasad, A., Lekkas, G., Bhattarai, S., **Gharat, S.**, Maity, M., Kumar, D., Collins, K.A., Schwarz, R.P. et. al 2023. VaTEST. II. Statistical Validation of 11 TESS-detected Exoplanets Orbiting K-type Stars. The Astronomical Journal, 166(1), p.9.
- Pininti, V.R., Bhatta, G., Paul, S., Kumar, A., Rajgor, A., Barnwal, R. and **Gharat, S.**, 2023. Exploring short-term optical variability of blazars using TESS. Monthly Notices of the Royal Astronomical Society, 518(1), pp.1459-1471.
- **Gharat, S.** and Dandawate, Y., 2022. Galaxy classification: a deep learning approach for classifying Sloan Digital Sky Survey images. Monthly Notices of the Royal Astronomical Society, 511(4), pp.5120-5124.
- Kulkarni, J.S., Cengiz, K. and **Gharat, S.**, 2021, March. Compact C-slot microstrip-fed planar antenna for wireless devices. In 2021 International Conference on Emerging Smart Computing and Informatics (ESCI) pp. 651-654. IEEE. .

Extended Abstract

- **Gharat, S.**, Borthakur, A. and Bhatta, G. Gamma Ray AGNs: Estimating Redshifts and Blazar Classification using traditional Neural Networks with smart initialization and self-supervised learning. NeurIPS Ml4PS 2023

Other details

- In collaboration with
  - Validation of Transiting Exoplanets using Statistical Tools (VaTEST)
  - LOFAR2.0 Ultra Deep Observation (LUDO)
  - Artificial Intelligence for Astronomy (AI4Astro)
- Peer Reviewer
  - NeurIPS ML4PS 2023
  - Frontiers in Astronomy and Space Sciences
  - Journal of Astronomical Instrumentation

  - Classical and Quantum Gravity
- Prestigious Schools and Interactions
  - Radio Astronomy Winter School (Among 40 students out of $1500+$)
  - ACM Pingala Interactions in Computing (Among 50 international researchers either pursuing PhD or graduated after 2019)
- PhD conversion rate (100%)
  Received offers from
  - Centre for Machine Intelligence and Data Science, IIT Bombay
  - Yardi School of AI, IIT Delhi
  - Department of Space Science and Astronomy, IIT Kanpur
  - Department of Computer Science and Engineering, IIT Gandhinagar