

## EDUCATION

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<b>Ph.D.</b> , Indian Institute of Technology Bombay, GPA: 8.85/10.00	<b>July 2022–</b>
<b>Bachelor of Technology</b> , Vishwakarma Institute of Information Technology, GPA: 9.29/10.00	<b>June 2022</b>
<b>Higher Secondary Certificate</b> , Jai Hind College, Percentage: 80.15/100	<b>June 2018</b>
<b>Secondary School Certificate</b> , UES Uran, Percentage: 87.20/100	<b>June 2016</b>

## BACHELOR'S THESIS

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**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/TO BE SUBMITTED

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- Gharat, S.** Chandrakumar A., Chan, Ck. Segmentation Made Easy: A python package to automatically identify sources in multi-wavelength astronomical images  
(To be Submitted: Journal of Machine Learning Research )
- 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  
(In Review: Publications of the Astronomical Society of Australia)

## PUBLICATIONS

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- 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. Monthly Notices of Royal Astronomical Society
- 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

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- 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 M4PS 2023

## OTHER DETAILS

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- 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
  - ACM Pingala Interactions in Computing 2024 (Among 45 international researchers either pursuing Ph.D. or graduated after 2019)
  - Radio Astronomy Winter School 2020 (Among 40 students out of 1500+)
- 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