



# National Institute of Technology Goa

Farmagudi, Ponda, Goa 403 401

(An Institution of National Importance under MHRD, Govt. of India)

Advt. No: NITG/ECE/2022/m/2124

Dated: 07/04/22

## **Advertisement for the Position of Junior Research Fellow (JRF)/Senior Research Fellow (SRF) under SERB, DST, GOI**

Applications are invited from the interested candidates for the post of JRF/SRF positions to work on the R&D project titled “**Deep-Learning Assisted Tomographic Ground Penetrating Radar for the Detection of Electrical and Morphological Features of Buried Objects**”, sanctioned under **Core Research Grant (CRG) by Science and Engineering Research Board (SERB), Dept. of Science and Technology (DST), Govt. of India.**

**Name of Project Investigator** : Dr. E. Mallikarjun

**Department** : Electronics and Communication Engineering, NIT Goa

**Name of Co-Investigator** : Dr. Venkatanaresbhabu Kuppili

**Department** :Computer Science Engineering, NIT Goa

**Name of Co-Investigator** : Dr. Amitabha Bhattacharya,

**Department** :Electronics and Electrical Communication Engineering, IIT Kharagpur

**Duration of the project** : 3 Years (March 2021-February 2024)

<b>Name of the Position</b>	<b>Duration</b>	<b>Consolidated Salary per month</b>	<b>Qualifications</b>	<b>No. of Positions</b>
JRF-Junior Research Fellow/ SRF-Senior Research Fellow	Initially for the period of one year which may be extended up to maximum of 3 years	For JRF, Rs. 35,960 / For SRF Rs. 40,600	B.Tech./B.E in Electronics & Communication Engineering and M.Tech./M.E/MS(R) in RF & Microwave Engineering/Communication Engineering/Signal Processing.	One

\*One JRF/SRF will be appointed initially for one year (contractual) and their services may be extended for one more year based on performance review

### **Eligibility for JRF:**

1. M.Tech./M.E/MS(R) in RF & Microwave Engineering/Communication Engineering/Signal Processing. Also, NET/GATE and at least 6.5 CGPA or 60 percent



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marks in aggregate from a recognized technical institute or university in a full-time program.

2. B.Tech/B.E./equivalent in Electronics and Communication Engineering with at least 6.5 CGPA or 60 percent marks in aggregate from a recognized technical institute or university in a full-time program.

## Eligibility for SRF:

Eligibility prescribed for JRF with two years of research experience.

**Desirable Qualification for JRF/SRF:** A strong knowledge in the following areas:

- ✦ Strong fundamentals of understanding electromagnetics and wave scattering.
- ✦ Knowledge of relevant tools such as, MATLAB, GPRMax software, CST/HFSS microwave simulators.
- ✦ Good mathematical skills and programming.
- ✦ Knowledge about Artificial Intelligence and Deep-learning

## Project Objectives:

- ✓ Development of Convolutional Neural Network (CNN) for full-wave inversion scheme for tomographic ground penetrating radar for estimating electrical and geophysical properties
- ✓ Development of new algorithms and models to accurate estimation of object detection
- ✓ Classification of dielectric and metallic objects from estimated images.
- ✓ Implementation of the existing traditional inverse algorithms and other state-of-the-art algorithms for comparison purpose.
- ✓ Application of the algorithms on various Image configurations and compare their performances.
- ✓ The testing of implemented algorithms on real data GPR data available in public domain

## Important Instructions:

1. Candidate possessing the requisite qualification and experience should apply; in the attached format along with their updated CV latest by **5<sup>th</sup> May 2022**. The applicant will be responsible for the authenticity of information, other documents and photographs submitted.
2. Mere, possessing the prescribed qualification does not ensure that the candidate would be called for Interview. The Candidates will be shortlisted on the basis of merit and need of the project.
3. Applicants in employment (private, government or any other organization) are required to submit a “No Objection Certificate” from the employer at the time of interview.
4. Application form (as given below) giving all the details along with self-attested copies of certificates, supporting documents and experience should reach to Dr. E. Mallikarjun (PI) at below given address latest by **5<sup>th</sup> May 2022** in Hardcopy. In addition, duly filled and signed



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scan copy of Application Form along with the scanned copies of mark sheets/documents can be sent to Dr. E. Mallikarjun (PI), through e-mail at: [emallikarjuna@nitgoa.ac.in](mailto:emallikarjuna@nitgoa.ac.in) with subject line “**Application for JRF/SRF position for CRG, SERB Project**”.

5. The Shortlisted Candidates will be informed by e-mail (apart from NIT Goa website "[www.nitgoa.ac.in](http://www.nitgoa.ac.in)") along with the date and time of the written test/interview. No other letter will be sent to the correspondence address.
6. Shortlisted candidates have to present themselves for the written test and/or interview with the updated CV, application form, original and attested photocopies of mark sheets/certificates in support of their academic qualifications. The written test and/or interview may be conducted online which will be subjected to the prevailing condition of Covid-19 pandemic.
7. No TA/DA shall be paid to candidates for attending the Interview and/or joining the position.
8. The appointment is for a time bound project and the candidate is required to work dedicatedly for the successful completion of the project. Selected candidate has to join immediately.
9. Incomplete application forms and forms received after due date will be summarily rejected.
10. All the Terms and Conditions for this recruitment will be as per guidelines of SERB, DST, Govt. of India.

## ADDRESS FOR CORRESPONDENCE

**Dr. E. Mallikarjun**

**Asst. Professor,**

**Department of ECE,**

**National Institute of Technology Goa,**

**Near ITI Building, Farmagudi, Ponda- 403401**

**Goa- India. Phone: 0832–2404204**

**E Mail: [emallikarjuna@nitgoa.ac.in](mailto:emallikarjuna@nitgoa.ac.in),**

**Website: <http://www.nitgoa.ac.in/>**



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## Application for the Position of Junior Research Fellow(JRF)/Senior Research Fellow (SRF) under SERB, DST, GOI

**Title of Project: Deep-Learning Assisted Tomographic Ground Penetrating Radar for the Detection of Electrical and Morphological Features of Buried Objects**

1. Post Applied for: JRF/SRF (Tick for suitable)

2. Name of the Candidate (BLOCKLETTER): \_\_\_\_\_

3. Father's Name (BLOCKLETTER): \_\_\_\_\_

4. Mother's Name (BLOCKLETTER): \_\_\_\_\_

5. (a) Date of Birth: (DD/MM/YYYY) \_\_\_\_\_

(b) Sex (Male/Female/Other): \_\_\_\_\_

(c) Marital Status (Married/Single): \_\_\_\_\_

(d) Category (SC/ST/OBC/PWD/GEN): \_\_\_\_\_

6. Previous Research experience: (use additional sheet if required) \_\_\_\_\_

7. Publication(s), if any: (use additional sheet if required) \_\_\_\_\_

8. GATE/ NET: Score: \_\_\_\_\_ Rank: \_\_\_\_\_ Specialization: \_\_\_\_\_ Year: \_\_\_\_\_

9. Academic Qualification: (Starting from Standard 10 or equivalent Examination)

Name of Exam Passed	Name of the School/College/Institute/University	Year of Passing	Discipline/Specialization	Percentage of Marks/CGPA

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10. (a) Address for Communication: (BLOCKLETTER)

(b) Contact No. (Mobile)

(c) E-mail ID :

11. Contact Details of two referees:

	Referee I	Referee II
Name:		
Designation:		
Organization:		
Office Address:		
Office Phone Number:		
Email ID:		

12. Areas of Expertise:

13. Experience details:

I do here by declare that the information furnished in this application is true to the best of my knowledge and belief. If selected, I promise to abide by the rules and regulations of the Institute.

Date:

Place:

Signature of the candidate