



DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING  
NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA  
SURATHKAL, SRINIVASNAGAR - 575025, MANGALORE,  
KARNATAKA, INDIA

Ref No: NITK/CIDS/07-2026/CMCK/ARG-ANRF/PA

Date: 06.07.2026

## Advertisement for Project Assistant

Applications with complete biodata are invited for temporary posts of **two** Project Assistants to work under a research project funded under the Advanced Research Grant (ARG) by the Anusandhan National Research Foundation (ANRF), Department of Science and Technology, Govt. of India. The selected candidates will carry out cutting-edge research in the development of an IoMT-based platform for robot-assisted rehabilitation, integrating embedded hardware, physiological signal acquisition, real-time control, and cloud-enabled web interfaces at the Centre for Interdisciplinary Studies at NITK Surathkal. The work is carried out in collaboration with IIT Goa and Kasturba Medical College (KMC), Mangalore.

**Project title and Reference No:** Development of a Internet of Medical Things Platform for Rehabilitation with Integrated Physiological Data Capture and Control Interface (Ref. No: ANRF/ARG/2025/007031/ENS).

### Principal Investigator:

**Dr. Krishnan C. M. C.**

Department of Electrical and Electronics,

NITK Surathkal, Mangalore, India

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### Co-Principal Investigators:

Dr. Deepu Vijayasanen, Dept. of Electronics and Communication Engineering, NITK Surathkal, Mangalore, India.
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Dr. Sheron Figarado, School of Electrical Sciences, IIT Goa, Goa
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**Collaborator and Consulting Physician:** Dr. Shyam Krishnan, Department of Physiotherapy, Kasturba Medical College, Mangalore, India.

## Essential Qualifications

- PA-1: Embedded Profile
  - B.E./B.Tech in Electrical/Electronics/Computer Sciences/ allied disciplines - minimum 60% aggregate percentage or 6.5/10 CGPA (relaxation as per Govt. of India norms for reserved categories).

- PA-2: Mechanical Design Profile
    - B.E./B. Tech in Mechanical/ Aerospace/Mechatronics/ allied disciplines – minimum 60% aggregate percentage or 6.5/10 GPA (relaxation as per Govt. of India norms for reserved categories)
  - The candidate should either (i) have a valid GATE score OR should (ii) have at least 6 months experience in area similar to this project.
- Age Limit:** 28 years (relaxation as per Govt. of India norms for reserved categories).

## Desired Skills

### PA-1: Embedded Profile

- Hands-on experience with embedded systems (ESP32, Raspberry Pi, Arduino or similar microcontrollers/SBCs).
- Familiarity with sensor interfacing — IMUs, EMG electrodes, rotary encoders, force/torque sensors.
- Knowledge of real-time data acquisition, signal filtering, and serial/wireless communication protocols (UART, SPI, I2C, WiFi/BLE).
- Experience with Python/C/C++ for embedded firmware or data processing.
- Exposure to web-based or cloud-based IoT platforms is an advantage.

### PA-2: Mechanical Design Profile

- Sound knowledge in mechanical design, finite element methods
- Proficiency in computer aided design using CATIA, Solid works, AutoCAD.
- Proficiency in simulation using ANSYS or similar software
- Knowledge in fabrication and mechatronics related work using sensors and motors.
- Prior work experience in rehabilitation engineering, assistive devices, or biomedical instrumentation is desirable.
- Ability to work in a multidisciplinary team; good communication and documentation skills.

## Salary and Duration

- INR 27000 per month (consolidated) + HRA (as per norms).
- The selected candidate will be appointed initially for one year (on contract) and the services will be extended next year based on the performance review and is co-terminus with the project. The candidate is encouraged to apply for M. Tech (Research) at NITK, Surathkal.

## How to apply

### Step-1:

Duly fill the application form (page 4 to 6 of this document, a doc format is available [HERE](#)) and take a scan. This, along with the scan of other documents (given as a checklist in the last page of the application), create a compressed/zip file. Name the file as “*yourFirstname\_Lastname\_PA.zip*”

### Step-2 (to be completed on or before **17<sup>th</sup> July 2026**):

You are required to fill-up the basic details through a google form link:

<https://docs.google.com/forms/d/e/1FAIpQLScjsFokN0FKGJtjm5iVn6eD-vWCnMgOwmaRoyFKKrTy5xY6ww/viewform?usp=header>

Written Test/Interview details will be emailed to suitable candidates only. TA/DA will not be paid for attending the interview. The positions are available immediately.

## More about the Project

### **Total Duration: 3 Years**

The aim of this project is to develop a modular, cloud-enabled Internet of Medical Things (IoMT) platform that integrates rehabilitation/assistive devices with real-time physiological data acquisition, intelligent control, and a secure web-based interface for clinicians, therapists, and patients. The project builds upon an existing functional Knee-Ankle-Foot Orthosis (KAFO) prototype developed for children with Cerebral Palsy, and extends its capability through a connected digital platform.

The project is multidisciplinary by nature and will involve:

Embedded systems and hardware integration — interfacing sensors (IMUs, surface EMG electrodes, rotary encoders, force/torque sensors) and actuators with microcontrollers (ESP32, Raspberry Pi) for real-time data capture and device control.

Signal acquisition and processing — development of multi-modal data pipelines for kinematic, kinetic, and biomedical signals including filtering, feature extraction, and synchronization across sensor modalities.

Web application and cloud backend development — building a role-based, secure web platform with dashboards for clinicians, patients, and technicians, supporting real-time visualization, remote monitoring, and therapy management.

AI and data analytics — implementation of machine learning and adaptive algorithms for patient progress evaluation, movement intent detection, and personalized therapy recommendations.

Integration with the NITK exoskeleton — deploying and validating the platform with the existing KAFO device during structured pilot sessions at the clinical site.

This collaborative project demands close interaction with physiotherapists and medical practitioners at Kasturba Medical College (KMC), Mangalore, and regular coordination between NITK Surathkal and IIT Goa. A significant portion of the work involves travel to KMC for prototype testing, pilot study sessions, and clinical feedback collection. The Project Assistants are expected to actively contribute to hardware-software integration, field trials, and research dissemination through publications and conferences.

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**Application for the Position of Project Assistant under ANRF**

1. Post Applied for (tick against the option, only one):

(A) Project Assistant-1: Embedded Profile

(B) Project Assistant-2: Mechanical Design Profile

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/Open

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

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

Paste here a  
recent passport  
size photograph

8. GATE/ NET (if any): Qualified (Yes/No): Score: \_\_\_\_\_ Rank: \_\_\_\_\_  
 Specialization: \_\_\_\_\_ Year: \_\_\_\_\_

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

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

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

(b) Contact No (Mob):

(c) E-mail ID :

11. Contact Details of two referees:

	<b>Referee I</b>	<b>Referee II</b>
Name :		
Designation :		
Organization:		
Office Address :		
Office Phone Number:		

Email ID:		
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12. Declaration:

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

Checklist (please tick the relevant documents and include it in the compressed file along with this application)

- Scanned copies of educational certificates and mark sheets from class X onwards
- Scanned copy of GATE Score Card (valid GATE).
- Scanned copies of Proof for research experience,
- Special achievements and publications, if any

**Note-** If any information is required, extra A4 sheet may be attached.