

National Institute of Technology, Durgapur

Department of Computer Science & Engineering

Mahatma Gandhi Avenue, Durgapur 713209, West Bengal

Advt. No.: NITD/CSE/IPOLLUSENSE/Recruitment/2024/01

Date of Advt.: 08.04.2024

Applications are invited from Indian citizens for the following posts to work on a project titled “*i-PolluSense: Intelligent Air & Noise Pollution Sensing and Alert Companion.*” <https://sites.google.com/view/ipollusense/home> funded by IIT Kharagpur AI4ICPS I Hub Foundation.

Project Summary: This project proposal aims at developing the platform with an affordable device to monitor air and noise pollution in India at the personal/community level. The platform integrates pollution sensors into a single board and uses a TinyML microcontroller for on-device processing. This device connects to the user's mobile phone via Bluetooth Low Energy and provides alerts and personalized recommendations based on the user's health profile and pollution exposure levels. The UI will use structured questionnaires to keep the steps logical and explainable. This device is a significant step in addressing the feature requirement for an environment pollution monitoring device in India at the personal/community level. With the advances in Large Language Models (LLMs) and Natural Language Understanding (NLU), especially in low-resource languages, the idea is to integrate such features using the current state of the art.

Expected Deliverables:

1. Integrating an affordable air and noise pollution monitoring device
2. Developing reliable sensing using AI models to ensure sensor fault tolerance, sensor calibration and activity recognition
3. Implementing intelligence at the Edge
4. Interactive pollution exposure estimation and action recommender

Summary of vacant positions advertised:

Sl. No.	Post Category	Number of vacancies	Duration	Fellowship Amount (INR)/month
1.	Senior Research Engineer	1	6 Months	42,000.00
2.	Software & Model Developer	1	24 Months	35,000.00
3.	Hardware Engineer	1	24 Months	35,000.00
4.	System Integrator/System Engineer	1	8 Months	15,000.00
5.	Intern	4*	5 months	5000.00

* Details of the general terms and conditions corresponding to each category may be found in the following pages.

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A. Post for Senior Research Engineer (One)

Post	Senior Research Engineer
Name of the Project	i-PolluSense: Intelligent Air & Noise Pollution Sensing and Alert Companion
Sponsored Agency	IIT Kharagpur AI4ICPS I Hub Foundation
No. of Post	One (01)
Duration	06 Months
Principal Investigator (PI) & Co-PI	Prof. Subrata Nandi (PI); Dr. Sanghita Bhattacharjee (Co-PI); Dr. Sujoy Saha (Co-PI)

General Terms & Conditions

Essential Qualifications	Pursuing PhD and M.E/M.Tech/MS/MCA in Computer Science and Engineering/ Electronics and Communication Engineering/ Information Technology.
Desirable Qualifications/Experience	More than 5 years of Research Experience in the field of Computer Science & Engineering OR Electronics & Communication Engineering, Knowledge of Machine Learning /Python/Algorithm, Good Programming and Analytical Skills
Fellowship	INR 42,000/- per month consolidated
Institute right	The institute has the discretion to restrict the number of candidates to be called for the interview based on screening. Candidates may only be recruited if suitable candidates are found.
Others:	** Selected candidate is expected to play a major role in the fundamental research, simulation and system development activities related to the project. - Financial assistance for attending Team meetings, Focus area meetings, Project meetings, National conferences etc. will be funded from the project whenever scheduled. - The above position is purely temporary, and is for a period of six months. Selected candidates will not be entitled to claim for regular appointments/absorption in this institute. - No TA/DA will be paid for attending the interview (if any). - Applications reaching after the specified date will not be considered. Canvassing in any form will disqualify the candidature.

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B. Post for Software & Model Developer (One)

Post	Software & Model Developer
Name of the Project	i-PolluSense: Intelligent Air & Noise Pollution Sensing and Alert Companion
Sponsored Agency	IIT Kharagpur AI4ICPS I Hub Foundation
No. of Post	One (01)
Duration	24 Months or the end of the project whichever is earlier
Principal Investigator (PI) & Co-PI	Prof. Subrata Nandi (PI); Dr. Sanghita Bhattacharjee (Co-PI); Dr. Sujoy Saha (Co-PI)

General Terms & Conditions

Essential Qualifications	BTech or M.E/M.Tech/M.Sc/MS/MCA in Computer Science and Engineering// Information Technology with minimum 7.0 CGPA or 65% marks from any recognized Institute/University. Final-year BTech students graduating in 2024 are allowed to apply.
Desirable Qualifications/Experience	Knowledge of Machine Learning /Python/Natural Language Processing/Mathematics/Probability, Algorithm, Good Programming and Analytical Skills
Fellowship	INR 35,000/- per month consolidated
Institute right	The institute has the discretion to restrict the number of candidates to be called for the interview on the basis of screening. Candidates may only be recruited if suitable candidates are found.
Others:	** Selected candidate is expected to play a major role in the fundamental research, simulation and system development activities related to the project. Financial assistance for attending Team meetings, Focus area meetings, Project meetings, National conferences etc. will be funded from the project whenever scheduled. The above position is purely temporary, and is for a period of 2 years or the end of the project whichever is earlier but subject to the condition of the candidate's performance (Performance will be evaluated for every six months). Selected candidates will not be entitled to claim for regular appointments/absorption in this institute. No TA/DA will be paid for attending the interview (if any). Applications reaching after the specified date will not be considered. Canvassing in any form will disqualify the candidature.

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C. Post for Hardware Engineer (One)

Post	Hardware Engineer
Name of the Project	i-PolluSense: Intelligent Air & Noise Pollution Sensing and Alert Companion
Sponsored Agency	IIT Kharagpur AI4ICPS I Hub Foundation
No. of Post	One (01)
Duration	2 Years or the end of the project whichever is earlier
Principal Investigator (PI) & Co-PI	Prof. Subrata Nandi (PI); Dr. Sanghita Bhattacharjee (Co-PI); Dr. Sujoy Saha (Co-PI)

General Terms & Conditions

Essential Qualifications	<p>BTECH OR M.E/M.Tech/M.Sc/MS/MCA in Computer Science and Engineering/ Electronics and Communication Engineering/ Information Technology with minimum 7.0 CGPA or 65% marks from any recognized Institute/University.</p> <p>Final-year BTech students graduating in 2024 are allowed to apply.</p>
Desirable Qualifications/Experience	<p>Knowledge of Hardware Prototyping in Microcontroller/Microcomputer is highly Desirable.</p> <p>Computer Architecture, Data Structure, Algorithm, Basics of IoT, C & Python, Basics of Machine Learning Algorithms</p>
Fellowship	INR 35,000/- per month consolidated
Institute right	The institute has the discretion to restrict the number of candidates to be called for the interview on the basis of screening. Candidates may only be recruited if suitable candidates are found.
Others:	<p>** Selected candidate is expected to play a major role in the fundamental research, simulation and system development activities related to the project. Financial assistance for attending Team meetings, Focus area meetings, Project meetings, National conferences etc. will be funded from the project whenever scheduled.</p> <p>The above position is purely temporary, and is for a period of 2 years or the end of the project whichever is earlier but subject to condition of the candidate's performance (Performance will be evaluated for every six months). Selected candidates will not be entitled to claim for regular appointments/absorption in this institute.</p> <p>No TA/DA will be paid for attending the interview (if any).</p> <p>Applications reaching after the specified date will not be considered.</p> <p>Canvassing in any form will disqualify the candidature.</p>

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D. Post for System Integrator/System Engineer (One)

Post	System Integrator/System Engineer
Name of the Project	i-PolluSense: Intelligent Air & Noise Pollution Sensing and Alert Companion
Sponsored Agency	IIT Kharagpur AI4ICPS I Hub Foundation
No. of Post	One (01)
Duration	08 Months
Principal Investigator (PI) & Co-PI	Prof. Subrata Nandi (PI); Dr. Sanghita Bhattacharjee (Co-PI); Dr. Sujoy Saha (Co-PI)

General Terms & Conditions

Essential Qualifications	Diploma in Electrical/ Electronics/ Computer Science
Desirable Qualifications/Experience	More than 5 Years experience on System Prototype Development & System Integration
Fellowship	INR 15,000/- per month consolidated
Institute right	The institute has the discretion to restrict the number of candidates to be called for the interview on the basis of screening. Candidates may only be recruited if suitable candidates are found.
Others:	<p>** Selected candidate is expected to play a major role in the fundamental research, simulation and system development activities related to the project. Financial assistance for attending Team meetings, Focus area meetings, Project meetings, National conferences etc. will be funded from the project whenever scheduled.</p> <p>The above position is purely temporary, and is for a period of 8 months but subject to the condition of the candidate's performance (Performance will be evaluated for every two months). Selected candidates will not be entitled to claim for regular appointments/absorption in this institute.</p> <p>No TA/DA will be paid for attending the interview (if any).</p> <p>Applications reaching after the specified date will not be considered.</p> <p>Canvassing in any form will disqualify the candidature.</p>

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E. Post for Interns (Four)

Post	Interns
Name of the Project	i-PolluSense: Intelligent Air & Noise Pollution Sensing and Alert Companion
Sponsored Agency	IIT Kharagpur AI4ICPS I Hub Foundation
No. of Post	Four (04) (Number of Posts May Vary)
Duration	5 Months
Principal Investigator (PI) & Co-PI	Prof. Subrata Nandi (PI); Dr. Sanghita Bhattacharjee (Co-PI); Dr. Sujoy Saha (Co-PI)

General Terms & Conditions

Essential Qualifications	Pursuing BTECH OR Pursuing M.E/M.Tech/MS/MCA in Computer Science and Engineering/ Electronics and Communication Engineering/ Information Technology with minimum 7.5 CGPA or 70% marks from any recognized Institute/University.
Desirable Qualifications/Experience	A. Knowledge of Machine Learning /Python/Natural Language Processing, Algorithm, Good Programming and Analytical Skills, B. Hardware Development & Integration, Data Structure Algorithm C. Android Application Development, Web Development, Data Structure, Algorithm
Fellowship	INR 5,000/- per month consolidated
Institute right	The institute has the discretion to restrict the number of candidates to be called for the interview on the basis of screening. Candidates may only be recruited if suitable candidates are found.
Others:	** Selected candidate is expected to play a major role in the fundamental research, simulation and system development activities related to the project. Financial assistance for attending Team meetings, Focus area meetings, Project meetings, National conferences etc. will be funded from the project whenever scheduled. The above position is purely temporary, and is for a period of 5 months but subject to the condition of the candidate's performance (Performance will be evaluated every two months). Selected candidates will not be entitled to claim for regular appointments/absorption in this institute. It can be extended later to 12 Months more. No TA/DA will be paid for attending the interview (if any). Applications reaching after the specified date will not be considered. Canvassing in any form will disqualify the candidature.

How to apply:

Interested candidates are advised to fill up the Google form latest by **29.04.2024**. Kindly attach a latest curriculum vitae. Incomplete applications will be rejected.

Link to Google form.: - <https://forms.gle/59UdY1kT7G2tcwYy9>

Only Shortlisted candidates will be called for an interview via online/offline mode. A list of shortlisted candidates will be displayed on the Institute's website. In case of any query, kindly contact +91-943-4788-158 and snandi.cse@nitdgp.ac.in

Prof. Subrata Nandi (PI – Project i-PolluSense),
Professor, Department of CSE, NIT Durgapur