

ANNAM.AI

An AI - CoE by the Ministry of
Education in the domain of Digital
Agriculture



ADVERTISEMENT for the position of Firmware Developer

Applications are invited from Indian nationals for the **Firmware Developer** position to work in Agri-Tech at ANNAM.AI, Indian Institute of Technology Ropar.

ANNAM.AI is a Section-8 company founded to establish the Artificial Intelligence Center of Excellence (AI-CoE) in Agriculture at the Indian Institute of Technology Ropar by the Ministry of Education, Government of India. The CoE is established to foster innovation, interdisciplinary research, and scalable AI solutions in the domain of Agriculture towards sustainable agriculture and the environment.

Job description: Firmware Developer

Location: IIT Ropar, Punjab,

Number of positions: 5

Type of job: Full-time (on contract)

Duration: Initially for 1 year. The contract can be extended based on satisfactory performance.

About the Role:

We are building next-generation AI-powered soil health monitoring systems designed for precision agriculture and climate-resilient farming. We're looking for a **Firmware Developer** who can bring real-world sensor data to life on low-power embedded platforms. You'll work at the intersection of hardware, software, and agriculture, enabling in-field sensing of soil parameters like moisture, EC, pH, and NPK through smart, connected devices.

Key Responsibilities:

- Develop and maintain reliable firmware for soil monitoring devices using microcontrollers (e.g., nRF52 Series).
- Implement communication protocols such as I2C, SPI, UART, BLE
- Optimize firmware for low power consumption and limited memory (targeting solar/battery-powered devices).
- Participate in hardware bring-up, calibration procedures, and field testing.

- Work with RTOS or bare-metal systems to schedule real-time sensor and communication tasks.
- Ensure robust version control and documentation (Git, testing).

Required Skills:

- Strong in embedded C/C++ and microcontroller programming.
- Experience with ARM Cortex-M based MCUs (Nordic).
- Knowledge of RTOS (Zephyr) and low-level hardware debugging.
- Sensor interfacing experience (especially with agri-sensors or industrial-grade sensors).
- Familiar with optimizing for power, memory, and stability in embedded environments. Able to debug with tools like J-Link, logic analysers, and oscilloscopes.

Remuneration:

- In the range of INR4-5 Lakhs per annum, negotiable depending on experience.
- Age: less than 35 years
- Suitable on-campus accommodation may be provided, based on availability.

Nice to Have:

- Experience deploying ML models to embedded devices.
- Familiarity with Nordic SDK / nRF Connect SDK / Zephyr RTOS.
- Hands-on exposure to BLE or AWS.
- Understanding of soil science, agriculture workflows, or environmental sensing.

What You Get:

- A chance to work on meaningful technology with real-world environmental impact.
- Access to cutting-edge tools in AI, embedded firmware, and soil monitoring tech.
- Flexible work environment with opportunities for hands-on prototyping and field trials.
- Collaborate with a passionate team of engineers, data scientists, and agronomists.
- Direct contribution to sustainable agriculture and climate-resilient systems.

How to apply:

Ready to join us? Complete our short application form, and our team will reach out to you soon!

[Click here to fill out the application form](#)

Terms and Instructions

- Only shortlisted candidates will be contacted/informed through email.

- AI-COE reserves the right to fill up the post, not to fill up the post, or cancel the advertisement in whole or part without assigning any reason. The company also reserves the right to limit the number of candidates to be called for written tests/or interviews. The decision of the company in this regard will be final.
 - Documentary evidence in support of all educational and professional qualifications will be required to be produced when specified.
 - The company can verify all the documents submitted by a candidate before the appointment, at the time of appointment, or during the tenure of the service. If it is detected that the documents submitted by the candidates are fake or the candidate has clandestine antecedents/background and has suppressed the said information, then his/her services shall be terminated.
 - If it is found later that any information given in the application is incorrect/false, the candidature/appointment is liable to be canceled/terminated.
-