Indian Institute of Technology Indore
Simrol Campus, Khandwa Road, Indore Pin: 453552

Date: 15 April 2021

Advertisement for Junior Research Fellow position

Applications are invited from eligible candidates for the position of Junior Research Fellow (JRF) in a National Super Computing Mission for High Performance Computing Applications sponsored project "**Hours to Milliseconds: Leveraging machine learning methods to reduce the computation time for crop yield prediction**"

This project requires a multitalented Junior research fellow who can work on developing advanced crop models, designing machine learning models, perform mathematical modelling of differential equations and has expertise in computer programming. Candidates are strongly advised to visit the research group websites of **Prof. Ganti S. Murthy** and **Dr. Satya Bulusu** before applying against this advertisement.

Project Details:

The **goal** of this exciting research project is to develop machine learning (ML) models for continental scale crop yield prediction which will be orders of magnitude faster (10s ms vs. hours) compared to the existing alternatives. We will use the existing extensive international and national datasets to train machine learning models for India specific crops such as paddy, wheat, corn and soybeans. Existing phenomenological and functional crop models are comprehensive but are very time consuming and require specialized software to conduct simulations. These challenges preclude a rapid and extensive 'what if' type scenario analysis under time and resource constraints. We will be using the high-performance computing facilities and infrastructure to fully develop machine learning based models for rapid analysis which will be useful to multiple stakeholders from farmers to policy makers.

Eligibility

Educational Qualifications: B.Tech/M.Sc/M.Tech in Agricultural/Computer/Electrical Engineering, Agronomy and Crop science, Applied Mathematics or any equivalent degree with first division at bachelors and masters levels as defined by the awarding Institute/University. Candidates qualifying GATE/JAM or any equivalent exam will be preferred.

Required Technical Skills:

- Knowledge of computer programming languages preferably C/C++/Python and MATLAB.
- Knowledge and ability to handle large datasets, install and handle databases.

Desirable Technical Skills:

- Knowledge of crop modelling.
- Demonstrated laboratory and computer modeling experience.
- Knowledge of Machine learning methods and advanced process control.

Desirable Soft Skills:

- Ability to work independently.
- Ability to solve problems with innovative multidisciplinary approaches.
- Team player and collaborative mindset.
- Passionate about agriculture and engineering

Depending on the success in the project, the JRF will work with industrial partners.

Monthly Stipend: The salary will be as per the DST norms. As an example, JRF may get about Rs. 25,000-31,000/month+16% HRA or campus accommodation in lieu of HRA (approximately Rs. 3.5-4.3 LPA salary+HRA) depending on the qualifications.

Duration: Initial appointment will be for 6-12 months, which is extendable up to a maximum of 30 months/duration of the project solely based on performance.

How to Apply: Interested candidates are requested to submit a detailed CV along with a cover letter (one page maximum) explaining why they should be considered for this position. Complete information of year of passing, experience, marks, etc. should be mentioned in the CV. ***Incomplete applications will be rejected without review.***

Selection Procedure:

Step 1. Please submit your application only here: https://internshala.com/internship/detail/machine-learning-applications-in-agriculture-using-high-performance-computing-facilities-internship-in-indore-at-iit-indore-bsbe-department1623052112

(any other form of application submission will not be considered)

Step 2. Answer the questions posted during the application process.

Step 3. A list of shortlisted candidates will be called for an online interview. (approximately one week after the due date)

Step 4. Selected candidate will join the project.

Last date of Application: 20th June 2021. Applications will be accepted until the position is filled.

Note:
1. CV should include details of academic grades starting from X standard onwards with details of year of passing, university or college, etc. and also work experience and nature of work if applicable. Complete details of NET/GATE such as year of passing/validity, discipline, marks, and All India Rank.
2. Only shortlisted candidates will be called for the interview. Selected candidates will be intimated by email. NO TA/DA will be paid for appearing for the interview, if conducted in person.
3. Candidates who can commit for the duration of the project will be given preference.