



भारतीय प्रौद्योगिकी संस्थान इन्दौर

सिमरोल, खण्डवा रोड, इन्दौर, भारत, पिन - 453 552

Indian Institute of Technology Indore

Simrol, Khandwa Road, Indore, India PIN - 453 552

IIT Indore

November 28, 2024

**Advertisement for Project Engineer – High-Performance Computing (HPC) and Cloud Computing in MeitY funded AgriHub Project**

Applications are invited from high caliber, enthusiastic and research-oriented candidates for the position of **Project Engineer – High-Performance Computing (HPC) and Cloud Computing** in MeitY funded AgriHub Project.

**About the project:** The 'AgriHub' is a transdisciplinary, multi-institutional collaborative Centre of Excellence (CoE) that brings stakeholders together to reduce the time taken to innovate, develop and deploy technologies for the benefit of breeders, researchers and farmers with an aim to provide advanced technologies such as high-performance computing and big data analytics for designing crops and implementing AI/ML platforms.

Essential Educational Qualification and specialization	B.E/BTech (Computer / IT / Electronics / E & TC/ Instrumentation/Data science) or equivalent. Candidate must have qualified GATE in Relevant area.
Desired Educational Qualification and specialization	ME/ M.Tech/ Ph.D (Computer / IT/ Electronics/ E & TC/ Instrumentation/Data science) or equivalent. Candidate must have qualified GATE in Relevant area.
Post Qualification relevant Experience (in years)	One Year  Committee may decide to relax experience criterion for ME/ M.Tech/ Ph.D based on their skill set/performance.
Desired Skill Sets	The role demands an in-depth understanding of High-Performance Computing (HPC), including parallel computing principles, distributed and shared memory architectures, and hybrid parallelism. Proficiency in programming languages such as C, C++, Fortran, and Python is essential, with expertise in Python for scripting and automation tasks. The candidate should have hands-on experience with HPC libraries like MPI and OpenMP, and GPU programming using CUDA or OpenCL.  A strong background in Linux system administration is necessary, including the ability to configure, manage, and troubleshoot Linux-based HPC clusters. Expertise in SLURM for job scheduling, resource allocation, and cluster management is highly desirable, along with knowledge of



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	<p>cluster monitoring, performance analysis, and parallel file systems such as Lustre or GPFS. The candidate should also be familiar with containerization tools like Docker, orchestration platforms like Kubernetes, and virtualization technologies such as KVM or Xen.</p> <p>In addition, the role requires a strong understanding of software development best practices, including version control systems like Git and the ability to write clean, modular, and optimized code. Skills in profiling and debugging performance bottlenecks using tools such as Intel VTune or NVIDIA Nsight are crucial. Effective collaboration, problem-solving abilities, and adaptability to emerging technologies are essential for success in this role.</p>
Proposed Job Profile	<p>The Project Engineer will be responsible for designing, developing, and optimizing High-Performance Computing (HPC) systems, managing Linux-based HPC clusters, and integrating advanced technologies such as GPU acceleration and quantum computing simulators. The role includes configuring and administering resource management tools like SLURM, ensuring system performance through profiling and debugging, and maintaining parallel file systems such as Lustre or GPFS. The engineer will also contribute to software development, leveraging programming languages like C, C++, Fortran, and Python, while implementing best practices for clean, optimized code. Additionally, the candidate will explore quantum computing principles, hybrid HPC-quantum integration, and support containerization and virtualization technologies to enhance system capabilities. Strong problem-solving, collaboration, and adaptability are essential to succeed in this dynamic and innovative role.</p>

**Monthly Stipend:** Consolidated Rs. 80,000 per month with yearly increment as per funding agency norms.

**Duration:** Initial appointment is for one year, which is extendable further based on performance up to the project duration. **Selected candidate may be considered for admission to Ph.D Programme (for Post graduate student) as a regular full-time scholar at IIT Indore as per Institute norms.**



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#### How to Apply:

1. Interested candidates are requested to submit **two pages write-up and a detailed CV** to Prof. Aruna Tiwari ([pi\\_agrihub@iiti.ac.in](mailto:pi_agrihub@iiti.ac.in)), via email only with the subject line as **“Application for Project Engineer in AgriHub project”**. The last date for submission of applications is ~~December 15, 2024~~ **extended to Dec. 20**. Only shortlisted candidates will be intimated by email for the online interview.
2. In two pages write-up, the candidate may write about his/her past experience and research work, any relevant research project done by the candidate, his/her idea for future research or views on the above project based on the literature search etc.
3. CV should include complete information such as academic grades/percentage starting from X<sup>th</sup> standard onwards with the details of year of passing, university or college, GATE score with year, discipline, marks, All India Rank, number of candidates appeared, contact details and a valid email id. **Kindly mention the work experience in detail of related field.** Incomplete applications will be rejected.
4. Only shortlisted candidates will be intimated by email for an online interview.
5. In case of any query related to above project, kindly email to Prof. Aruna Tiwari.