

## (B) Development of Software for Remotely Submitting and Monitoring Jobs on an HPC Cluster

### Abstract

The importance of High-Performance Computing (HPC) in our society has continuously increased over the years and contributed significantly to scientific discoveries. IPR has established two HPC clusters with a size of 5.2 TFlops and 35 TFlops (27 TFlops CPU and 8 TFlops GPU) to cater the needs of its Scientists and Researchers. These clusters are heavily used to carry out cutting-edge research in different domains. For using such HPC facilities, HPC users who are mostly from a non-Computer Science background, require a basic working knowledge of Linux and HPC concepts. Many times it has been found that the users had to spend a considerable amount of time to understand the process of job submission and monitoring on these HPC clusters. There are complicated commands which users need to remember/learn or have to depend on HPC administrator for helping them in making the correct job submission scripts for their jobs. Overall, it becomes a tedious and time-consuming exercise to use the command line utilities to carry out their activities on a daily basis.

The objective of this project is to develop software for remotely submitting and monitoring jobs on an HPC cluster through a powerful GUI with smart and simplified interfaces. This will help in smoothly utilizing the available HPC resources by addressing the needs of a novice as well as experienced HPC users. End-user productivity will improve as the user can spend more time creating better simulation models without making the job submission scripts. The user-friendly GUI of the software can help and motivate more and more users to run their simulations on HPC clusters instead of running them on their workstations.

### REFERENCES

- [1].CHReME: A Web Based Application Execution Tool for using HPC Resources (<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.667.3950&rep=rep1&type=pdf>)
- [2].<https://www.pbsworks.com/pdfs/AltairAccessDesktopAdminGuide2018.4.pdf>

**Eligibility: Only students of Computer Science/IT branches can submit their application at Email: [deepakagg@ipr.res.in](mailto:deepakagg@ipr.res.in) [Guide e-mail address] and [project\\_ee@ipr.res.in](mailto:project_ee@ipr.res.in) [Project**

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