

**CHRIST**(DEEMED TO BE UNIVERSITY)
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Notice for the PhD Viva Voce Examination

Mr Fairoz Pasha, Registration Number: 2170272, PhD Scholar at the School of Engineering and Technology, CHRIST (Deemed to be University), will defend his PhD thesis at the public viva-voce examination on Monday, 07 September 2026 at 10.30 am in the CDI Conference Room, Block V, Bangalore Kengeri Campus, CHRIST (Deemed to be University), Bengaluru - 560074, Karnataka, India.

Title of the Thesis	:	An Efficient Trust-Based Workflow Scheduling Model for Cloud Computing Environment
Discipline	:	Computer Science and Engineering
External Examiner - I	:	Dr S Baghavathi Priya Associate Professor Department of Computer Science and Engineering Amrita School of Computing Amrita Vishwa Vidyapeetham, Chennai Chennai - 601103 Tamil Nadu
External Examiner - II	:	Dr Harish Kumar Professor Department of Computer Science and Engineering SRM Institute of Science and Technology, Delhi NCR Campus Ghaziabad - 201204 Uttar Pradesh
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The members of the Research Advisory Committee of the Scholar, the faculty members of the Department and the School, interested experts and research scholars of all the branches of research are cordially invited to attend this open viva-voce examination.

Place: Bengaluru
Date: 27 August 2026

Registrar (Academics)

ABSTRACT

Cloud computing has enabled data-intensive scientific applications through complex workflows represented as Directed Acyclic Graphs (DAGs). Efficient scheduling of these interdependent tasks is essential to improve performance, scalability, reliability, and resource utilization. However, existing cloud scheduling approaches often lead to high energy consumption, operational costs, longer makespan, and missed deadlines, particularly in multicore environments with heterogeneous high-performance and energy-efficient resources. To address these challenges, intelligent multi-objective scheduling approaches are required. The first proposed framework, Energy-Aware Workflow Scheduling (EWS), minimizes both workflow makespan and energy consumption by intelligently assigning tasks based on their characteristics, execution requirements, and energy profiles. Experiments using CyberShake and Inspiral workflows demonstrate that EWS outperforms existing scheduling techniques. The second framework, Secure and Efficient Workflow Scheduling (SEWS), addresses security requirements for sensitive and mission-critical applications by incorporating trust-based metrics to evaluate virtualized computing resources. A multi-objective optimization mechanism selects reliable resources while considering makespan, energy consumption, and QoS constraints. Experiments using the Montage workflow show improved performance compared with existing methods. Finally, the Consensus-Based Secure Integrity and Quality Assurance Workflow Scheduling (CSIQA-WS) model is proposed for edge-cloud environments. Its effectiveness is evaluated using Montage, CyberShake, and Inspiral workflows. Statistical analysis and robustness testing further confirm the consistency and stability of the proposed approaches under varying workloads and system conditions.

Keywords: *Workflow Scheduling, Scientific workflow applications, Montage, Cybershake, Inspiral, Makespan, Energy Consumption, Quality of Service.*

Publications:

1. **Fairoz Pasha**, Jayapandian N, "Research on secure workload execution scheme in heterogeneous cloud environment," Indonesian Journal of Electrical Engineering and Computer Science, vol. 29, no. 2, pp. 1047-1054, 2023.
2. **Fairoz Pasha**, Jayapandian N, "An intelligent secure and efficient workflow scheduling (SEWS) model for heterogeneous cloud computing environment," Knowledge and Information Systems, vol. 67, no 7, pp. 6193-6239, 2025.
3. **Fairoz Pasha**, Jayapandian N, "Multi-objective energy aware integrated cloud scheduling with a consensus-based security," Bulletin of Electrical Engineering and Informatics, vol. 15, no. 2, pp. 1313-1323, 2026.
4. **Fairoz Pasha**, Jayapandian N, "Quality and Security Assurance Workload Scheduling in Heterogeneous Cloud Environment," International Conference on Innovative Mechanisms for Industry Applications (ICIMIA), pp. 1134-1140, IEEE, 2023.
5. **Fairoz Pasha**, Jayapandian N, "Privacy-Integrity Aware Efficient Workflow Scheduler for Edge-Cloud Platform," International Conference on Next-Generation Communication and Computing (NGCCOM). Lecture Notes in Networks and Systems, vol. 1305, pp. 171-184, 2024.