

Dr. Varun Barthwal

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About the Faculty: Dr. Varun Barthwal is a faculty member in Department of Information Technology at School of Engineering and Technology, H N B Garhwal University. He has been teaching for last Ten years to the undergraduate students and PG students. Currently he undertakes theory and laboratory courses related to Data structure and algorithm, Computer Programming. He graduated from G B Pant Engineering College, Pauri Garhwal and completed his Master degree on Computer Technology and Application from Delhi College of Engineering affiliated to Delhi University in 2009. His technical expertise includes Cloud Computing, Meta-heuristics techniques and Programming.

Specializations: Computer Technology and Application, Cloud Computing, IoT, Soft-computing

Other Administrative duties: Assistant Dean of Student welfare, Hostel warden (March, 2016 – November, 2017)

Department In-charge/Head: March 2012- November, 2017

RESEARCH PAPERS JOURNALS AND CONFERENCES:

1. Barthwal, Varun & Rauthan, M. (2021). AntPu: a meta-heuristic approach for energy-efficient and SLA-aware management of virtual machines in cloud computing. *Memetic Computing*. 13, 91–110 (2021), 10.1007/s12293-020-00320-7 (**SCI IF 5.9**).
2. Panwar, Suraj & Rauthan, M. & Barthwal, Varun. (2022). A systematic review on effective energy utilization management strategies in cloud data centers. *Journal of Cloud Computing*. 11. 10.1186/s13677-022-00368-5 (**SCI IF 3.89**).
3. Barthwal, Varun & Rauthan, M.M.S. & Varma, Rohan. (2022). SMA-LinR: An Energy and SLA-Aware Autonomous Management of Virtual Machines. In *International Journal of Cloud Applications and Computing (IJCAC)* 12 (1), 1-24. (**SCOPUS**).
4. Barthwal, Varun & Rauthan, M.M.S. & Varma, Rohan. (2020). A survey on the application of machine learning to manage the virtual machines in cloud computing. *International Review of Applied Sciences and Engineering*. 11 (3). 197-208. 10.1556/1848.2020.00065 (**SCOPUS**).
5. P. S. Rawat, A. K. Yadav and V. Barthwal (2015), "Grid resource computing environment simulation using GridSim toolkit," 2015 2nd International Conference on Computing for Sustainable Global Development (INDIACom), New Delhi, 2015, pp. 1069-1073, **Publisher IEEE**.
6. P. S. Rawat, G. P. Saroha and V. Barthwal, "Performance evaluation of social networking application with different Load balancing policy across virtual machine in a single Data Center using CloudAnalyst," *2012 2nd IEEE International Conference on Parallel, Distributed and Grid Computing*, 2012, pp. 469-473, doi: 10.1109/PDGC.2012.6449866, **Publisher IEEE**.
7. P. S. Rawat, P. Dimri, G. P. Saroha and V. Barthwal, "Power consumption analysis across heterogeneous data center using CloudSim," *2016 3rd International Conference on Computing for Sustainable Global Development (INDIACom)*, 2016, pp. 1-5, **Publisher IEEE**.

8. S. S. Panwar, M. M. S. Rauthan and V. Barthwal, "Energy Consumption Analysis of Various Dynamic Virtual Machine Consolidation Techniques in Cloud Data Center," 2022 International Conference on Advances in Computing, Communication and Materials (ICACCM), Dehradun, India, 2022, pp. 1-8, doi: 10.1109/ICACCM56405.2022.10009565. **Publisher IEEE.**
9. Barthwal, Varun & Rauthan, Man & Verma, Rohan. (2021). AntVMp: An Approach for Energy-Efficient Placement of Virtual Machines Using Max–Min Ant System. 10.1007/978-981-33-4087-9_13 **Publisher Springer.**
10. Sissodia, Rajeshwari & Rauthan, Manmohan & Barthwal, Varun. (2022). A Multi-Objective Optimization Scheduling Method Based on the Genetic Algorithm in Cloud Computing. International Journal of Cloud Applications and Computing. 12. 1-21. 10.4018/IJCAC.305217.
11. Sissodia, Rajeshwari & Rauthan, Manmohan & Barthwal, Varun. (2022). A Multi-Objective Adaptive Upper Threshold Approach for Overloaded Host Detection in Cloud Computing. International Journal of Cloud Applications and Computing. 12. 1-14. 10.4018/IJCAC.311038.
12. Karishma Dobhal, Rohan Varma, Varun Barthwal, M.M.S. Rauthan. (2020). The Relative performance of Security protocols and attacks in Wireless Sensor Network. International Journal of Advanced Science and Technology, 29(05), 13985 – 14000 (**SCOPUS**).
13. Rawat, Pradeep & Dimri, Priti & Barthwal, Varun. (2016). A Priority Base Task Scheduling on Virtual Machines using Workflowsim. Information Technology Journal. 15. 39-45. 10.3923/ijtj.2016.39.45 (**SCOPUS**).
14. Verma, Rohan & Barthwal, Varun & Rauthan, Manmohan. (2019). Virtual Machines Placement Using Predicted Utilization of Physical Machine in Cloud Datacenter. SSRN Electronic Journal. 6. 10.2139/ssrn.3394104.
15. Singh Rawat, Pradeep & Saroha, Gyanendra & Barthwal, Varun. (2012). Quality of Service Evaluation of SaaS Modeler (Cloudlet) running on Virtual Cloud computing Environment using CloudSim. International Journal of Computer Applications. 53. 35-38. 10.5120/8484-2424.
16. Singh, Pradeep & Dimri, Priti & Saroha, Gyanendra & Barthwal, Varun. (2016). A Load Balancing Analysis of Cloud Base Application with different Service Broker Policies. International Journal of Computer Applications. 135. 11-15. 10.5120/ijca2016908516.
17. Panwar, Pratyush & Verma, Rohan & Rauthan, M. & Barthwal, Varun. (2021). An Overview on Security Issues, Attacks, Challenges and Protocols in WSN. 10.1007/978-981-33-6307-6_27.
18. Verma, Rohan & Vaisla, Dr. Kunwar & Barthwal, Varun. (2019). An Efficient Junction-based Routing Table Maintenance Protocol for Vehicular Ad-hoc Networks. SSRN Electronic Journal. 10.2139/ssrn.3403412.

INVITED LECTURE/PRESENTATION/TRAINING:

1. Speaker on **“Energy Consumption Modelling in Cloud Environment using CloudSim Simulator”** in the Online Faculty Development Programme (FDP) on Emerging Technologies in Cloud Computing, IOT and Blockchain, technically sponsored by CSI Ghaziabad Chapter, organized by the Department of Computer Science and Engineering of Jaypee Institute of Information Technology, Noida from 19th June 2020 to 23rd June 2020.
2. Speaker on **“Quantum Cryptography: An Application of Quantum Computing”**, in the 2-week Summer School on Industry 4.0: Security and Technological Aspects (SSIST’2021), technically sponsored by IEEE UP Section (India), organized by the Department of Computer Science and Engineering of Jaypee Institute of Information Technology, Noida from 9th August to 21st August 2021.
3. Paper Presentation titled **“AntVMp: An approach for energy-efficient placement of Virtual Machines using max-min ant system”**, during the International Conference on “Machine Intelligence and Data Science Applications (MIDAS-2020) in association with Next Generation Computing Technology (NGCT) Society held on 4th -5th September 2020 at University of Petroleum and Energy Studies, Dehradun, Uttarakhand, INDIA.
4. Paper Presentation titled **“Virtual Machines Placement using Predicted Utilization of Physical Machines in Cloud Datacenter”** in the International Conference on “Advances in Engineering Science Management & Technology 2019” organized by Uttaranchal University, Dehradun on 14th and 15th March. 2019.
5. Resource person in **E-Content development workshop** organized by District Education and Training Institute (DEIT) Pauri Garhwal Uttarakhand.
6. Paper Presentation titled **“Systematic Evaluation on Energy Efficient Cloud Data Centers with Reduced SLAV”** in International Conference on Intelligence System (ICIS-2022) Organized by Uttaranchal University Dehradun, Uttarakhand.
7. Resource person in **Introduction to coding (scratch programming)** in an online training program organized by District Education and Training Institute (DEIT) Pauri Garhwal Uttarakhand.

Book Chapters/Proceedings:

1. P. S. Rawat, A. K. Yadav and V. Barthwal (2015), "Grid resource computing environment simulation using GridSim toolkit," 2015 2nd International Conference on Computing for Sustainable Global Development (INDIACom), New Delhi, 2015, pp. 1069-1073, **(Publisher IEEE)**.
2. P. S. Rawat, G. P. Saroha and V. Barthwal, "Performance evaluation of social networking application with different Load balancing policy across virtual machine in a single Data Center using CloudAnalyst," *2012 2nd IEEE International Conference on Parallel, Distributed and Grid Computing*, 2012, pp. 469-473, doi: 10.1109/PDGC.2012.6449866, **(Publisher IEEE)**.
3. P. S. Rawat, P. Dimri, G. P. Saroha and V. Barthwal, "Power consumption analysis across heterogeneous data center using CloudSim," *2016 3rd International Conference on Computing for Sustainable Global Development (INDIACom)*, 2016, pp. 1-5, **(Publisher IEEE)**.
4. S. S. Panwar, M. M. S. Rauthan and V. Barthwal, "Energy Consumption Analysis of Various Dynamic Virtual Machine Consolidation Techniques in Cloud Data Center," 2022 International Conference on Advances in Computing, Communication and Materials (ICACCM), Dehradun, India, 2022, pp. 1-8, doi: 10.1109/ICACCM56405.2022.10009565. **(Publisher IEEE)**.
5. Barthwal, Varun & Rauthan, Man & Verma, Rohan. (2021). AntVMp: An Approach for Energy-Efficient Placement of Virtual Machines Using Max–Min Ant System. 10.1007/978-981-33-4087-9_13 **(Publisher Springer)**.
6. Panwar, Pratyush & Verma, Rohan & Rauthan, M. & Barthwal, Varun. (2021). An Overview on Security Issues, Attacks, Challenges and Protocols in WSN. 10.1007/978-981-33-6307-6_27. **(Publisher Springer)**.