

Appendix A

List of Publications

Journals

1. Dharmendra Prasad Mahato and Ravi Shankar Singh. “On maximizing reliability of grid transaction processing system considering balanced task allocation using social spider optimization”, **Swarm and Evolutionary Computation, Elsevier, SCI, Impact Factor: 3.893**, <http://dx.doi.org/10.1016/j.swevo.2017.07.011>, **Published.**
2. Dharmendra Prasad Mahato, Ravi Shankar Singh, Anil Kumar Tripathi, and Ashish Kumar Maurya. “On Scheduling Transactions in a Grid Processing System considering load through Ant Colony Optimization”, **Applied Soft Computing, Elsevier, SCI, Impact Factor: 3.541**, <https://doi.org/10.1016/j.asoc.2017.08.047>, **Published.**
3. Dharmendra Prasad Mahato and Ravi Shankar Singh. “Balanced task allocation in the on-demand computing based transaction processing system using social spider optimization”, **Concurrency and Computation: Practice and Experience, Wiley Online Library, SCIE, Impact Factor: 1.133**, DOI: 10.1002/cpe.4214, **Published.**
4. Dharmendra Prasad Mahato and Ravi Shankar Singh. “Load Balanced Transaction Scheduling using Honey Bee Optimization Considering Performability in

- On-demand Computing System”, **Concurrency and Computation: Practice and Experience, Wiley Online Library, SCIE, Impact Factor: 1.133, DOI: 10.1002/cpe.4253, Published.**
5. Dharmendra Prasad Mahato and Ravi Shankar Singh. “Maximizing availability for task scheduling in on-demand computing based transaction processing system using ant colony optimization”, **Concurrency and Computation: Practice and Experience, Wiley Online Library, SCIE, Impact Factor: 1.133, DOI:10.1002/cpe.4405, Published.**
 6. Dharmendra Prasad Mahato and Ravi Shankar Singh. “A hierarchical modeling and analysis for deadline-constrained grid service reliability”, **IEEE Transactions on Services Computing, SCI, Impact Factor: 3.520, Under Review.**
 7. Dharmendra Prasad Mahato and Ravi Shankar Singh. “Dependability analysis of on-demand computing based transaction processing using stochastic differential equations”, **Concurrency and Computation: Practice and Experience, Wiley Online Library, SCIE, Impact Factor: 1.133, Under Review.**
 8. Dharmendra Prasad Mahato and Ravi Shankar Singh. “Coloured Petri Nets based modeling of On-Demand Computing based Transaction Processing System”, **Concurrency and Computation: Practice and Experience, Wiley Online Library, SCIE, Impact Factor: 1.133, Under Review.**
 9. Dharmendra Prasad Mahato and Ravi Shankar Singh. “Cuckoo search-ant colony optimization based load balanced transaction scheduling in grid computing system”, **IEEE Transactions on Evolutionary Computation, SCI, Impact Factor:10.629, Under Review.**

Conference Proceedings

1. Dharmendra Prasad Mahato, Ashish Kumar Maurya, Anil Kumar Tripathi and Ravi Shankar Singh “Dynamic and adaptive load balancing in transaction oriented grid service” In **Green High Performance Computing (ICGHPC), 2nd International Conference on, pp. 1-5. IEEE, 2016.**

2. Dharmendra Prasad Mahato, Lokendra Singh Umrao and Ravi Shankar Singh “Adaptability in transaction oriented grid service” **In Parallel, Distributed and Grid Computing (PDGC), 2014 International Conference on, pp. 239-244. IEEE, 2014.**
3. Lokendra Singh Umrao, Dharmendra Prasad Mahato and Ravi Shankar Singh “Fault tolerance for hypercube networks via independent spanning trees” **In Parallel, Distributed and Grid Computing (PDGC), 2014 International Conference on, pp. 191-195. IEEE, 2014.**
4. Dharmendra Prasad Mahato, Lokendra Singh Umrao and Ravi Shankar Singh “Recovery of Failures in Transaction Oriented Composite Grid Service” **IJCA Proceedings on Computing Communication and Sensor Network 2013 CCSN 2013, Vol. 2, pp-38-42.**

Book Chapters

1. Lokendra Singh Umrao, Dharmendra Prasad Mahato and Ravi Shankar Singh “Recent Trends in Parallel Computing.” **In Encyclopedia of Information Science and Technology, Third Edition, pp. 3580-3589. IGI Global, 2015.**
2. Dharmendra Prasad Mahato and Ravi Shankar Singh “Empirical Reliability Modeling of Transaction Oriented Autonomic Grid Service” **In Recent Advances in Mathematics, Statistics and Computer Science, pp. 528-537, 2016, World Scientific Publishing Co.**

Doctoral Symposium

1. Dharmendra Prasad Mahato, “Soft Computing based Dependability Analysis for On-Demand Computing based Transaction Processing System”, **CSE Doctoral Symposium, NIIT University, Neemrana, Rajasthan, September 23-24, www.niituniversity.in/research/cse-doctoral-symposium, 2017.**

Bibliography

- [1] Deo Prakash Vidyarthi and Anil Kumar Tripathi. Maximizing reliability of distributed computing system with task allocation using simple genetic algorithm. *Journal of Systems Architecture*, 47(6):549–554, 2001.
- [2] Ivanoe De Falco, Eryk Laskowski, Richard Olejnik, Umberto Scafuri, Ernesto Tarantino, and Marek Tudruj. Extremal optimization applied to load balancing in execution of distributed programs. *Applied Soft Computing*, 30:501–513, 2015.
- [3] Klaus Krauter, Rajkumar Buyya, and Muthucumaru Maheswaran. A taxonomy and survey of grid resource management systems for distributed computing. *Software: Practice and Experience*, 32(2):135–164, 2002.
- [4] Ian Foster, Yong Zhao, Ioan Raicu, and Shiyong Lu. Cloud computing and grid computing 360-degree compared. In *Grid Computing Environments Workshop, 2008. GCE'08*, pages 1–10. IEEE, 2008.
- [5] Ting Wang, Jochem Vonk, Benedikt Kratz, and Paul Grefen. A survey on the history of transaction management: from flat to grid transactions. *Distributed and Parallel Databases*, 23(3):235–270, 2008.
- [6] Can Türker, Klaus Haller, Christoph Schuler, and Hans-Jörg Schek. How can we support grid transactions? towards peer-to-peer transaction processing. In *CIDR*, pages 174–185, 2005.
- [7] Feilong Tang, Minglu Li, and Joshua Zhexue Huang. Real-time transaction processing for autonomic grid applications. *Engineering Applications of Artificial Intelligence*, 17(7):799–807, 2004.

- [8] Fei-Long Tang, Ming-Lu Li, Zhe-Xue Huang, and Cho-Li Wang. Transaction service for service grid and its correctness analysis based on petri net. *Jisuanji Xuebao/Chinese Journal of Computers*, 28(4):667–676, 2005.
- [9] Feilong Tang, Minyi Guo, Minglu Li, and Li Li. Transaction management for reliable grid applications. In *Advanced Information Networking and Applications, 2009. AINA'09. International Conference on*, pages 427–434. IEEE, 2009.
- [10] Waqar Haque, Andrew Toms, and Aaron Germuth. Dynamic load balancing in real-time distributed transaction processing. In *Computational Science and Engineering (CSE), 2013 IEEE 16th International Conference on*, pages 268–274. IEEE, 2013.
- [11] Jean-Claude Laprie. Dependability: Basic concepts and terminology. In *Dependability: Basic Concepts and Terminology*, pages 3–245. Springer, 1992.
- [12] Algirdas Avizienis, J-C Laprie, Brian Randell, and Carl Landwehr. Basic concepts and taxonomy of dependable and secure computing. *IEEE transactions on dependable and secure computing*, 1(1):11–33, 2004.
- [13] L Anand, D Ghose, and V Mani. Elisa: an estimated load information scheduling algorithm for distributed computing systems. *Computers & Mathematics with Applications*, 37(8):57–85, 1999.
- [14] Klavdiya Bochenina, Nikolay Butakov, and Alexander Boukhanovsky. Static scheduling of multiple workflows with soft deadlines in non-dedicated heterogeneous environments. *Future Generation Computer Systems*, 55:51–61, 2016.
- [15] Fatos Xhafa and Ajith Abraham. Computational models and heuristic methods for grid scheduling problems. *Future generation computer systems*, 26(4):608–621, 2010.
- [16] RM Smith, Kishor S. Trivedi, and AV Ramesh. Performability analysis: measures, an algorithm, and a case study. *IEEE Transactions on Computers*, 37(4):406–417, 1988.
- [17] Yuan-Shun Dai, Min Xie, and Kim-Leng Poh. Availability modeling and cost optimization for the grid resource management system. *Systems, Man and*

- Cybernetics, Part A: Systems and Humans, IEEE Transactions on*, 38(1):170–179, 2008.
- [18] Varsha Mainkar. Availability analysis of transaction processing systems based on user-perceived performance. In *Reliable Distributed Systems, 1997. Proceedings., The Sixteenth Symposium on*, pages 10–17. IEEE, 1997.
- [19] Dharmendra Prasad Mahato, Lokendra Singh Umrao, and Ravi Shankar Singh. Adaptability in transaction oriented grid service. In *Parallel, Distributed and Grid Computing (PDGC), 2014 International Conference on*, pages 239–244. IEEE, 2014.
- [20] Hameed Hussain, Saif Ur Rehman Malik, Abdul Hameed, Samee Ullah Khan, Gage Bickler, Nasro Min-Allah, Muhammad Bilal Qureshi, Limin Zhang, Wang Yongji, Nasir Ghani, et al. A survey on resource allocation in high performance distributed computing systems. *Parallel Computing*, 39(11):709–736, 2013.
- [21] AK Tripathi, BK Sarker, N Kumar, and DP Vidyarthi. Multiple task allocation with load considerations. *International Journal of Information and Computing Science*, 3(1):36–44, 2000.
- [22] Sol M. Shatz, J-P Wang, and Masanori Goto. Task allocation for maximizing reliability of distributed computer systems. *IEEE Transactions on Computers*, 41(9):1156–1168, 1992.
- [23] Xiao Qin and Hong Jiang. A dynamic and reliability-driven scheduling algorithm for parallel real-time jobs executing on heterogeneous clusters. *Journal of Parallel and Distributed Computing*, 65(8):885–900, 2005.
- [24] S Kartik and C Siva Ram Murthy. Task allocation algorithms for maximizing reliability of distributed computing systems. *IEEE Transactions on Computers*, 46(6):719–724, 1997.
- [25] Xiaoyong Tang, Kenli Li, Renfa Li, and Bharadwaj Veeravalli. Reliability-aware scheduling strategy for heterogeneous distributed computing systems. *Journal of Parallel and Distributed Computing*, 70(9):941–952, 2010.

- [26] Dharmendra Prasad Mahato, Ravi Shankar Singh, Anil Kumar Tripathi, and Ashish Kumar Maurya. On scheduling transactions in a grid processing system considering load through ant colony optimization. *Applied Soft Computing*, 2017.
- [27] Eryk Laskowski, Marek Tudruj, Ivanoe De Falco, Umberto Scafuri, Ernesto Tarantino, and Richard Olejnik. Extremal optimization applied to task scheduling of distributed java programs. In *European Conference on the Applications of Evolutionary Computation*, pages 61–70. Springer, 2011.
- [28] Ivanoe De Falco, Eryk Laskowski, Richard Olejnik, Umberto Scafuri, Ernesto Tarantino, and Marek Tudruj. Extremal optimization approach applied to initial mapping of distributed java programs. *Euro-Par 2010-Parallel Processing*, pages 180–191, 2010.
- [29] Vincenzo Di Martino and Marco Mililotti. Sub optimal scheduling in a grid using genetic algorithms. *Parallel computing*, 30(5):553–565, 2004.
- [30] Seonho Kim and Jon B Weissman. A genetic algorithm based approach for scheduling decomposable data grid applications. In *Parallel Processing, 2004. ICPP 2004. International Conference on*, pages 406–413. IEEE, 2004.
- [31] Yang Gao, Hongqiang Rong, and Joshua Zhexue Huang. Adaptive grid job scheduling with genetic algorithms. *Future Generation Computer Systems*, 21(1): 151–161, 2005.
- [32] Jia Yu, Rajkumar Buyya, and Kotagiri Ramamohanarao. Workflow scheduling algorithms for grid computing. In *Metaheuristics for scheduling in distributed computing environments*, pages 173–214. Springer, 2008.
- [33] Sagnika Saha, Souvik Pal, and Prasant Kumar Pattnaik. A novel scheduling algorithm for cloud computing environment. In *Computational Intelligence in Data Mining—Volume 1*, pages 387–398. Springer, 2016.
- [34] Yun-Han Lee, Seiven Leu, and Ruay-Shiung Chang. Improving job scheduling algorithms in a grid environment. *Future generation computer systems*, 27(8): 991–998, 2011.

- [35] Kai Lu, Riky Subrata, and Albert Y Zomaya. On the performance-driven load distribution for heterogeneous computational grids. *Journal of Computer and System Sciences*, 73(8):1191–1206, 2007.
- [36] Ruay-Shiung Chang, Jih-Sheng Chang, and Po-Sheng Lin. An ant algorithm for balanced job scheduling in grids. *Future Generation Computer Systems*, 25(1): 20–27, 2009.
- [37] Israel Casas, Javid Taheri, Rajiv Ranjan, Lizhe Wang, and Albert Y Zomaya. A balanced scheduler with data reuse and replication for scientific workflows in cloud computing systems. *Future Generation Computer Systems*, 2016.
- [38] Theo Haerder and Andreas Reuter. Principles of transaction-oriented database recovery. *ACM Computing Surveys (CSUR)*, 15(4):287–317, 1983.
- [39] Maricela-Georgiana Avram. Advantages and challenges of adopting cloud computing from an enterprise perspective. *Procedia Technology*, 12:529–534, 2014.
- [40] Farrukh Shahzad. State-of-the-art survey on cloud computing security challenges, approaches and solutions. *Procedia Computer Science*, 37:357–362, 2014.
- [41] Rajkumar Buyya, David Abramson, and Jonathan Giddy. Nimrod/g: An architecture for a resource management and scheduling system in a global computational grid. In *High Performance Computing in the Asia-Pacific Region, 2000. Proceedings. The Fourth International Conference/Exhibition on*, volume 1, pages 283–289. IEEE, 2000.
- [42] Anil Kumar Tripathi, Biplab Kumer Sarker, Naveen Kumar, and Deo Prakash Vidyarthi. A ga based multiple task allocation considering load. *International Journal of High Speed Computing*, 11(04):203–214, 2000.
- [43] Deo Vidyarthi, Biplab Kumer Sarker, Anil Kumar Tripathi, and Laurence Tianruo Yang. *Scheduling in distributed computing systems: Analysis, design and models*. Springer Science & Business Media, 2008.
- [44] Peng Xiao and Zhigang Hu. Workload-aware reliability evaluation model in grid computing. *Journal of Computers*, 7(1):141–146, 2012.

- [45] Keqin Li. Optimal load distribution in nondedicated heterogeneous cluster and grid computing environments. *Journal of Systems Architecture*, 54(1):111–123, 2008.
- [46] Ana Cortés, Ana Ripoll, Miquel A Senar, and Emilio Luque. Dynamic load balancing strategy for scalable parallel systems. *Advances in Parallel Computing*, 12:735–738, 1998.
- [47] Yajun Li, Yuhang Yang, Maode Ma, and Liang Zhou. A hybrid load balancing strategy of sequential tasks for grid computing environments. *Future Generation Computer Systems*, 25(8):819–828, 2009.
- [48] Thomas Kunz. The influence of different workload descriptions on a heuristic load balancing scheme. *Software Engineering, IEEE Transactions on*, 17(7):725–730, 1991.
- [49] Wesley W Chu, Leslie J Holloway, K Efe, et al. Task allocation in distributed data processing. *Computer*, (11):57–69, 1980.
- [50] Abraham Silberschatz, Peter B Galvin, Greg Gagne, and A Silberschatz. *Operating system concepts*, volume 4. Addison-Wesley Reading, 1998.
- [51] Andrew S. Tanenbaum. *Modern Operating Systems*. Pearson-Prentice Hall, 3rd edition, 2009.
- [52] William Stallings. *Operating systems*, volume 4. Prentice Hall Englewood Cliffs, 1995.
- [53] Naglaa M Reda, A Tawfik, Mohamed A Marzok, and Soheir M Khamis. Sort-mid tasks scheduling algorithm in grid computing. *Journal of advanced research*, 6(6): 987–993, 2015.
- [54] Marco Dorigo and Christian Blum. Ant colony optimization theory: A survey. *Theoretical computer science*, 344(2-3):243–278, 2005.
- [55] Sang-Min Park, Young-Bae Ko, and Jai-Hoon Kim. Disconnected operation service in mobile grid computing. In *International Conference on Service-Oriented Computing*, pages 499–513. Springer, 2003.

- [56] Umar Farooq and Wajeeda Khalil. A generic mobility model for resource prediction in mobile grids. In *International Symposium on Collaborative Technologies and Systems (CTS'06)*, pages 189–193. IEEE, 2006.
- [57] Antonios Litke, Dimitrios Skoutas, Konstantinos Tserpes, and Theodora Varvarigou. Efficient task replication and management for adaptive fault tolerance in mobile grid environments. *Future Generation Computer Systems*, 23(2): 163–178, 2007.
- [58] Fei-Long Tang, Ming-Lu Li, and Joshua Zhexue Huang. Automatic transaction compensation for reliable grid applications. *Journal of Computer Science and Technology*, 21(4):529, 2006.
- [59] Malarvizhi Nandagopal and V Rhymend Uthariaraj. Decentralized dynamic load balancing for multi cluster grid environment. *Advanced Computing*, pages 149–160, 2011.
- [60] Ruay-Shiung Chang, Chun-Fu Lin, and Jen-Jom Chen. Selecting the most fitting resource for task execution. *Future Generation Computer Systems*, 27(2):227–231, 2011.
- [61] Sheng-De Wang, I-Tar Hsu, and Zheng-Yi Huang. Dynamic scheduling methods for computational grid environments. In *Parallel and Distributed Systems, 2005. Proceedings. 11th International Conference on*, volume 1, pages 22–28. IEEE, 2005.
- [62] Sundaram Suresh, Hao Huang, and Hyoung Joong Kim. Hybrid real-coded genetic algorithm for data partitioning in multi-round load distribution and scheduling in heterogeneous systems. *Applied Soft Computing*, 24:500–510, 2014.
- [63] Dervis Karaboga. An idea based on honey bee swarm for numerical optimization. Technical report, Technical report-tr06, Erciyes university, engineering faculty, computer engineering department, 2005.
- [64] Dervis Karaboga and Bahriye Basturk. On the performance of artificial bee colony (abc) algorithm. *Applied soft computing*, 8(1):687–697, 2008.

- [65] Brian R Johnson and James C Nieh. Modeling the adaptive role of negative signaling in honey bee intraspecific competition. *Journal of insect behavior*, 23(6):459–471, 2010.
- [66] Chi-Yeh Chen. Task scheduling for maximizing performance and reliability considering fault recovery in heterogeneous distributed systems. *IEEE Transactions on Parallel and Distributed Systems*, 27(2):521–532, 2016.
- [67] Marco Dorigo, Mauro Birattari, and Thomas Stützle. Ant colony optimization. *Computational Intelligence Magazine, IEEE*, 1(4):28–39, 2006.
- [68] Marco Dorigo and Thomas Stützle. The ant colony optimization metaheuristic: Algorithms, applications, and advances. In *Handbook of metaheuristics*, pages 250–285. Springer, 2003.
- [69] Marco Dorigo and Mauro Birattari. Ant colony optimization. In *Encyclopedia of machine learning*, pages 36–39. Springer, 2010.
- [70] Alberto Colorni, Marco Dorigo, Vittorio Maniezzo, et al. Distributed optimization by ant colonies. In *Proceedings of the first European conference on artificial life*, volume 142, pages 134–142. Paris, France, 1991.
- [71] Simone A Ludwig and Azin Moallem. Swarm intelligence approaches for grid load balancing. *Journal of Grid Computing*, 9(3):279–301, 2011.
- [72] Ritu Garg and Awadhesh Kumar Singh. Adaptive workflow scheduling in grid computing based on dynamic resource availability. *Engineering Science and Technology, an International Journal*, 18(2):256–269, 2015.
- [73] Suchang Guo, Hong-Zhong Huang, Zhonglai Wang, and Min Xie. Grid service reliability modeling and optimal task scheduling considering fault recovery. *IEEE Transactions on reliability*, 60(1):263–274, 2011.
- [74] Thomas Stützle and Marco Dorigo. Aco algorithms for the traveling salesman problem. *Evolutionary Algorithms in Engineering and Computer Science*, pages 163–183, 1999.
- [75] Bin Yu, ZZ Yang, and JX Xie. A parallel improved ant colony optimization for multi-depot vehicle routing problem. *Journal of the Operational Research Society*, 62(1):183–188, 2011.

- [76] Kwang Mong Sim and Weng Hong Sun. Ant colony optimization for routing and load-balancing: survey and new directions. *Systems, Man and Cybernetics, Part A: Systems and Humans, IEEE Transactions on*, 33(5):560–572, 2003.
- [77] Kun Li, Gaochao Xu, Guangyu Zhao, Yushuang Dong, and Dan Wang. Cloud task scheduling based on load balancing ant colony optimization. In *Chinagrid Conference (ChinaGrid), 2011 Sixth Annual*, pages 3–9. IEEE, 2011.
- [78] Mohammed Abdullahi, Md Asri Ngadi, et al. Symbiotic organism search optimization based task scheduling in cloud computing environment. *Future Generation Computer Systems*, 56:640–650, 2016.
- [79] Youwei Ding, Xiaolin Qin, Liang Liu, and Taochun Wang. Energy efficient scheduling of virtual machines in cloud with deadline constraint. *Future Generation Computer Systems*, 50:62–74, 2015.
- [80] Hamid Arabnejad, Jorge G Barbosa, and Radu Prodan. Low-time complexity budget–deadline constrained workflow scheduling on heterogeneous resources. *Future Generation Computer Systems*, 55:29–40, 2016.
- [81] Thomas D Seeley. *The wisdom of the hive: the social physiology of honey bee colonies*. 1997.
- [82] Dhinesh Babu LD and P Venkata Krishna. Honey bee behavior inspired load balancing of tasks in cloud computing environments. *Applied Soft Computing*, 13(5):2292–2303, 2013.
- [83] Tatjana Davidović, Milica Šelmić, Dušan Teodorović, and Dušan Ramljak. Bee colony optimization for scheduling independent tasks to identical processors. *Journal of heuristics*, 18(4):549–569, 2012.
- [84] Li-Pei Wong, Malcolm Yoke Hean Low, and Chin Soon Chong. A bee colony optimization algorithm for traveling salesman problem. In *Proceedings of the 2008 Second Asia International Conference on Modelling & Simulation (AMS)*, pages 818–823. IEEE Computer Society, 2008.
- [85] Yunqiang Yin, Wen-Hung Wu, TCE Cheng, Chin-Chia Wu, and Wen-Hsiang Wu. A honey-bees optimization algorithm for a two-agent single-machine scheduling

- problem with ready times. *Applied Mathematical Modelling*, 39(9):2587–2601, 2015.
- [86] Salim Bitam. Bees life algorithm for job scheduling in cloud computing. In *Proceedings of The Third International Conference on Communications and Information Technology*, pages 186–191, 2012.
- [87] Chin Soon Chong, Appa Iyer Sivakumar, Malcolm Yoke Hean Low, and Kheng Leng Gay. A bee colony optimization algorithm to job shop scheduling. In *Proceedings of the 38th conference on Winter simulation*, pages 1954–1961. Winter Simulation Conference, 2006.
- [88] DT Pham, E Koc, JY Lee, and J Phrueksanant. Using the bees algorithm to schedule jobs for a machine. In *Proc eighth international conference on laser metrology, CMM and machine tool performance, LAMDAMAP, Euspen, UK, Cardiff*, pages 430–439, 2007.
- [89] Dharmendra Prasad Mahato, Ashish Kumar Maurya, Anil Kumar Tripathi, and Ravi Shankar Singh. Dynamic and adaptive load balancing in transaction oriented grid service. In *Green High Performance Computing (ICGHPC), 2016 2nd International Conference on*, pages 1–5. IEEE, 2016.
- [90] Sol M Shatz and J-P Wang. Models and algorithms for reliability-oriented task-allocation in redundant distributed-computer systems. *IEEE Transactions on Reliability*, 38(1):16–27, 1989.
- [91] S Kartik and C Siva Ram Murthy. Improved task-allocation algorithms to maximize reliability of redundant distributed computing systems. *IEEE Transactions on Reliability*, 44(4):575–586, 1995.
- [92] Kishor S Trivedi, Jogesh K Muppala, Steven P Woollet, and Boudewijn R Haverkort. Composite performance and dependability analysis. *Performance Evaluation*, 14(3):197–215, 1992.
- [93] I Yen, Ing-Ray Chen, et al. Reliability assessment of multiple-agent cooperating systems. *Reliability, IEEE Transactions on*, 46(3):323–332, 1997.

-
- [94] Qin-Ma Kang, Hong He, Hui-Min Song, and Rong Deng. Task allocation for maximizing reliability of distributed computing systems using honeybee mating optimization. *Journal of Systems and Software*, 83(11):2165–2174, 2010.
- [95] Jorge E Pezoa, Sagar Dhakal, and Majeed M Hayat. Maximizing service reliability in distributed computing systems with random node failures: Theory and implementation. *Parallel and Distributed Systems, IEEE Transactions on*, 21(10):1531–1544, 2010.
- [96] Chung-Chi Hsieh and Yi-Che Hsieh. Reliability and cost optimization in distributed computing systems. *Computers & Operations Research*, 30(8):1103–1119, 2003.
- [97] Peng-Yeng Yin, Shiuh-Sheng Yu, Pei-Pei Wang, and Yi-Te Wang. Task allocation for maximizing reliability of a distributed system using hybrid particle swarm optimization. *Journal of Systems and Software*, 80(5):724–735, 2007.
- [98] Atakan Dogan and Fusun Ozguner. Matching and scheduling algorithms for minimizing execution time and failure probability of applications in heterogeneous computing. *IEEE Transactions on Parallel and Distributed Systems*, 13(3):308–323, 2002.
- [99] Anne Benoit, Mourad Hakem, and Yves Robert. Contention awareness and fault-tolerant scheduling for precedence constrained tasks in heterogeneous systems. *Parallel Computing*, 35(2):83–108, 2009.
- [100] Tarek Hagraas and Jan Janeček. A high performance, low complexity algorithm for compile-time task scheduling in heterogeneous systems. *Parallel Computing*, 31(7):653–670, 2005.
- [101] G Manimaran and C Siva Ram Murthy. A fault-tolerant dynamic scheduling algorithm for multiprocessor real-time systems and its analysis. *IEEE Transactions on Parallel and Distributed Systems*, 9(11):1137–1152, 1998.
- [102] Xiao Qin and Hong Jiang. A novel fault-tolerant scheduling algorithm for precedence constrained tasks in real-time heterogeneous systems. *Parallel Computing*, 32(5):331–356, 2006.

- [103] Min-Sheng Lin and Deng-Jyi Chen. The computational complexity of the reliability problem on distributed systems. *Information Processing Letters*, 64(3): 143–147, 1997.
- [104] Gamal Attiya and Yskandar Hamam. Task allocation for maximizing reliability of distributed systems: A simulated annealing approach. *Journal of parallel and Distributed Computing*, 66(10):1259–1266, 2006.
- [105] Mohammad Hadi Mobini, Reza Entezari-Maleki, and Ali Movaghar. Biogeography-based optimization of makespan and reliability in grid computing systems. In *Ultra Modern Telecommunications and Control Systems and Workshops (ICUMT), 2012 4th International Congress on*, pages 336–342. IEEE, 2012.
- [106] Dharmendra Prasad Mahato and Ravi Shankar Singh. Load balanced transaction scheduling using honey bee optimization considering performability in on-demand computing system. *Concurrency and Computation: Practice and Experience*, 29(21), 2017.
- [107] Dharmendra Prasad Mahato and Ravi Shankar Singh. On maximizing reliability of grid transaction processing system considering balanced task allocation using social spider optimization. *Swarm and Evolutionary Computation*, 2017.
- [108] R Kumar, MK Tiwari, and R Shankar. Scheduling of flexible manufacturing systems: an ant colony optimization approach. *Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture*, 217(10): 1443–1453, 2003.
- [109] Salvador García, Alberto Fernández, Julián Luengo, and Francisco Herrera. A study of statistical techniques and performance measures for genetics-based machine learning: accuracy and interpretability. *Soft Computing*, 13(10):959, 2009.
- [110] Laurent David and Isabelle Puaut. Static determination of probabilistic execution times. In *Real-Time Systems, 2004. ECRTS 2004. Proceedings. 16th Euromicro Conference on*, pages 223–230. IEEE, 2004.
- [111] Peter Puschner and Ch Koza. Calculating the maximum execution time of real-time programs. *Real-time systems*, 1(2):159–176, 1989.

- [112] H. W. Braun. Nsfnet routing architecture, 1989.
- [113] Saeed Parsa and Reza Entezari-Maleki. Task dispatching approach to reduce the number of waiting tasks in grid environments. *The Journal of Supercomputing*, 59(1):469–485, 2012.
- [114] Dimitri P Bertsekas, Robert G Gallager, and Pierre Humblet. *Data networks*, volume 2. Prentice-Hall International New Jersey, 1992.
- [115] Krishna M Kavi, Hee Yong Youn, Behrooz Shirazi, and Ali R Hurson. A performability model for soft real-time systems. In *System Sciences, 1994. Proceedings of the Twenty-Seventh Hawaii International Conference on*, volume 2, pages 571–579. IEEE, 1994.
- [116] Yun-Han Lee, Seiven Leu, and Ruay-Shiung Chang. Improving job scheduling algorithms in a grid environment. *Future generation computer systems*, 27(8):991–998, 2011.
- [117] Dharmendra Prasad Mahato and Ravi Shankar Singh. Balanced task allocation in the on-demand computing-based transaction processing system using social spider optimization. *Concurrency and Computation: Practice and Experience*, 29(18), 2017.
- [118] Toby J Teorey and Wee Teck Ng. Dependability and performance measures for the database practitioner. *IEEE Transactions on Knowledge and data engineering*, 10(3):499–503, 1998.
- [119] Erik Cuevas, Miguel Cienfuegos, Daniel Zaldívar, and Marco Pérez-Cisneros. A swarm optimization algorithm inspired in the behavior of the social-spider. *Expert Systems with Applications*, 40(16):6374–6384, 2013.
- [120] JQ James and Victor OK Li. A social spider algorithm for global optimization. *Applied Soft Computing*, 30:614–627, 2015.
- [121] Kurt Jensen. Coloured petri nets. In *Petri nets: central models and their properties*, pages 248–299. Springer, 1987.
- [122] Kurt Jensen. An introduction to the theoretical aspects of coloured petri nets. In *Workshop/School/Symposium of the REX Project (Research and Education in Concurrent Systems)*, pages 230–272. Springer, 1993.

- [123] Mark L Winston. The wisdom of the hive: The social physiology of honey bee colonies. *Science*, 272(5264):967–968, 1996.
- [124] Yunqiang Yin, Wen-Hung Wu, TCE Cheng, Chin-Chia Wu, and Wen-Hsiang Wu. A honey-bees optimization algorithm for a two-agent single-machine scheduling problem with ready times. *Applied Mathematical Modelling*, 39(9):2587–2601, 2015.
- [125] Zahid Raza and Deo Prakash Vidyarthi. Maximizing reliability with task scheduling in a computational grid using ga. *International Journal of Advancements in Computing Technology*, 1(2):40–47, 2009.
- [126] Anthony Sulistio, Uros Cibej, Srikumar Venugopal, Borut Robic, and Rajkumar Buyya. A toolkit for modelling and simulating data grids: an extension to gridsim. *Concurrency and Computation: Practice and Experience*, 20(13):1591–1609, 2008.
- [127] Malarvizhi Nandagopal, Kandaswamy Gokulnath, and V Rhymend Uthariaraj. Sender initiated decentralized dynamic load balancing for multi cluster computational grid environment. In *Proceedings of the 1st Amrita ACM-W Celebration on Women in Computing in India*, page 63. ACM, 2010.
- [128] Hongbo Liu, Ajith Abraham, and Aboul Ella Hassanien. Scheduling jobs on computational grids using a fuzzy particle swarm optimization algorithm. *Future Generation Computer Systems*, 26(8):1336–1343, 2010.
- [129] Shiv Prakash and Deo Prakash Vidyarthi. Maximizing availability for task scheduling in computational grid using genetic algorithm. *Concurrency and Computation: Practice and Experience*, 27(1):193–210, 2015.
- [130] Omar Sabri. Measuring is success factors of adopting cloud computing from enterprise overview. In *Proceedings of the The International Conference on Engineering & MIS 2015*, page 3. ACM, 2015.