

# Bibliography

- [1] *Home TOP500 Supercomputer Website*. retrieved online on January 14, 2015. 71, 74
- [2] MOSTAFAI ABD-EL-BARR, MOHAMMADM NADEEM, AND KHALID AL-TAWIL. A heuristic-based wormhole routing algorithm for hypercube multicomputer networks. *Cluster Computing*, **4**(3):253–262. 33
- [3] H. AHMADI AND W.E. DENZEL. A survey of modern high-performance switching techniques. *Selected Areas in Communications, IEEE Journal on*, **7**(7):1091–1103, Sep 1989. 20
- [4] BILL AIELLO AND TOM LEIGHTON. Coding theory, hypercube embeddings, and fault tolerance. In *Proceedings of the Third Annual ACM Symposium on Parallel Algorithms and Architectures*, SPAA '91, pages 125–136, New York, NY, USA, 1991. ACM. 31
- [5] NOVRUZ M ALLAHVERDI, ŞIRZAD Ş KAHRAMANLI, AND KAYHAN ERCIYEŞ. A fault tolerant routing algorithm based on cube algebra for hypercube systems. *Journal of systems architecture*, **46**(2):201–205, 2000. 28
- [6] F. ANNEXSTEIN. Fault tolerance in hypercube-derivative networks. In *Proceedings of the First Annual ACM Symposium on Parallel Algorithms and Architectures*, SPAA '89, pages 179–188, New York, NY, USA, 1989. ACM. 31
- [7] A. AVIZIENIS, J.-C. LAPRIE, B. RANDELL, AND C. LANDWEHR. Basic concepts and taxonomy of dependable and secure computing. *Dependable and Secure Computing, IEEE Transactions on*, **1**(1):11–33, Jan 2004. 11

## BIBLIOGRAPHY

---

- [8] SHOBANA BALAKRISHNAN, FSUN ZGNER, AND BABACK IZADI. Fault tolerance in hypercubes. In FSUN ZGNER AND FIKRET ERAL, editors, *Parallel Computing on Distributed Memory Multiprocessors*, **103** of *NATO ASI Series*, pages 233–260. Springer Berlin Heidelberg. 31
- [9] P. BANERJEE, J.T. RAHMEH, C. STUNKEL, V.S. NAIR, K. ROY, V. BALASUBRAMANIAN, AND J.A. ABRAHAM. Algorithm-based fault tolerance on a hypercube multiprocessor. *Computers, IEEE Transactions on*, **39**(9):1132–1145, Sep 1990. 31
- [10] FENG BAO, YOSHIHIDE IGARASHI, AND KEIKO KATANO. Broadcasting in hypercubes with randomly distributed byzantine faults. In *Proceedings of the 9th International Workshop on Distributed Algorithms*, WDAG '95, pages 215–229, London, UK, UK, 1995. Springer-Verlag. 93
- [11] L.A. BARROSO, J. DEAN, AND U. HOLZLE. Web search for a planet: The google cluster architecture. *Micro, IEEE*, **23**(2):22–28, March 2003. 2
- [12] J-C BERMOND, NATHALIE HOMOBONO, AND CLAUDINE PEYRAT. Large fault-tolerant interconnection networks. *Graphs and Combinatorics*, **5**(1):107–123, 1989. 27
- [13] JEAN-CLAUDE BERMOND, AFONSO FERREIRA, STPHANE PRENNES, AND JOSEPH G. PETERS. Neighborhood broadcasting in hypercubes. *SIAM Journal on Discrete Mathematics*, **21**(4):823–843, 2008. 93
- [14] D.P. BERTSEKAS, C. ZVEREN, G.D. STAMOULIS, P. TSENG, AND J.N. TSITSIKLIS. Optimal communication algorithms for hypercubes. *Journal of Parallel and Distributed Computing*, **11**(4):263–275, 1991. 9
- [15] ANTOINE BOSSARD AND KEIICHI KANEKO. Time optimal node-to-set disjoint paths routing in hypercubes. *Journal of Information Science and Engineering*, **30**(4):1087–1093, 2014. 9, 75, 76
- [16] ANTOINE BOSSARD, KEIICHI KANEKO, AND SHIETUNG PENG. Fault-tolerant node-to-set disjoint-path routing in hypercubes. In CHING-HSIEN HSU, LAURENCE T. YANG, JONGHYUK PARK, AND SANG-SOO YEO, editors, *Algorithms*

- and Architectures for Parallel Processing*, **6081** of *Lecture Notes in Computer Science*, pages 511–519. Springer Berlin Heidelberg, 2010. 9, 41, 75, 86
- [17] R.D. BRANDT, YAO WANG, A.J. LAUB, AND S.K. MITRA. Alternative networks for solving the traveling salesman problem and the list-matching problem. In *Neural Networks, 1988., IEEE International Conference on*, pages 333–340, July 1988. 75
- [18] ANDREI BRODER, MICHAEL FISCHER, DANNY DOLEV, AND BARBARA SIMONS. Efficient fault tolerant routings in networks. In *Proceedings of the sixteenth annual ACM symposium on Theory of computing*, pages 536–541. ACM, 1984. 16
- [19] FRANCK CAPPELLO. Fault tolerance in petascale/ exascale systems: Current knowledge, challenges and research opportunities. *International Journal of High Performance Computing Applications*, **23**(3):212–226, 2009. 13
- [20] CHIEN-PING CHANG, TING-YI SUNG, AND LIH-HSING HSU. Edge congestion and topological properties of crossed cubes. *IEEE Transactions on Parallel and Distributed Systems*, **11**(1):64–80, 2000. 31, 75
- [21] CHIEN-PING CHANG, JYH-NAN WANG, AND LIH-HSING HSU. Topological properties of twisted cube. *Information Sciences*, **113**(12):147–167, 1999. 31, 75
- [22] Y. CHANG. Fault tolerant broadcasting in simd hypercubes. In *Parallel and Distributed Processing, 1993. Proceedings of the Fifth IEEE Symposium on*, pages 348–351, Dec 1993. 31
- [23] M. CHATTI, S. YEHAIA, C. TIMSIT, AND S. ZERTAL. A hypercube-based noc routing algorithm for efficient all-to-all communications in embedded image and signal processing applications. In *High Performance Computing and Simulation (HPCS), 2010 International Conference on*, pages 623–630, June 2010. 30, 75
- [24] GUO-LIANG CHEN, GUANG-ZHONG SUN, YUN XU, AND MIN LU. Methodology of research on parallel algorithms. *J Chin Comput*, **31**(9):1493–1502, 2008. 2
- [25] JIANER CHEN, IYAD A. KANJ, AND GUOJUN WANG. Hypercube network fault tolerance: A probabilistic approach. *Journal of Interconnection Networks*, **06**(01):17–34, 2005. 9, 28

## BIBLIOGRAPHY

---

- [26] MING-SYAN CHEN AND K.G. SHIN. Adaptive fault-tolerant routing in hypercube multicomputers. *Computers, IEEE Transactions on*, **39**(12):1406–1416, Dec 1990. 31
- [27] MING-SYAN CHEN AND K.G. SHIN. Depth-first search approach for fault-tolerant routing in hypercube multicomputers. *Parallel and Distributed Systems, IEEE Transactions on*, **1**(2):152–159, Apr 1990. 31, 32
- [28] BAOLEI CHENG, JIANXI FAN, XIAOHUA JIA, SHUKUI ZHANG, AND BANGRUI CHEN. Constructive algorithm of independent spanning trees on möbius cubes. *The Computer Journal*, page bxs123, 2012. 92
- [29] J CHERIYAN AND S.N MAHESHWARI. Finding nonseparating induced cycles and independent spanning trees in 3-connected graphs. *Journal of Algorithms*, **9**(4):507–537, 1988. 92
- [30] ANDREW A. CHIEN AND JAE H. KIM. Planar-adaptive routing: Low-cost adaptive networks for multiprocessors. *SIGARCH Comput. Archit. News*, **20**(2):268–277, April 1992. 16
- [31] GE-MING CHIU AND KAI-SHUNG CHEN. Efficient fault-tolerant multicast scheme for hypercube multicomputers. *Parallel and Distributed Systems, IEEE Transactions on*, **9**(10):952–962, Oct 1998. 31
- [32] GE-MING CHIU AND SHUI-PAO WU. A fault-tolerant routing strategy in hypercube multicomputers. *Computers, IEEE Transactions on*, **45**(2):143–155, Feb 1996. 31
- [33] HONGSIK CHOI, SS SUBRAMANIAM, AND HYEONG-AH CHOI. On double-link failure recovery in wdm optical networks. In *INFOCOM 2002. Twenty-First Annual Joint Conference of the IEEE Computer and Communications Societies. Proceedings. IEEE*, **2**, pages 808–816. IEEE, 2002. 16
- [34] FLAVIN CRISTIAN. Understanding fault-tolerant distributed systems. *Commun. ACM*, **34**(2):56–78, February 1991. 9
- [35] SEAN CURRAN, ORLANDO LEE, AND XINGXING YU. Finding four independent trees. *SIAM Journal on Computing*, **35**(5):1023–1058, 2006. 92

- [36] WILLIAM JAMES DALLY AND BRIAN PATRICK TOWLES. *Principles and practices of interconnection networks*. Morgan Kaufmann Elsevier, 2004. 5
- [37] W.J. DALLY AND H. AOKI. Deadlock-free adaptive routing in multicomputer networks using virtual channels. *Parallel and Distributed Systems, IEEE Transactions on*, **4**(4):466–475, Apr 1993. 23
- [38] W.J. DALLY AND C.L. SEITZ. Deadlock-free message routing in multiprocessor interconnection networks. *Computers, IEEE Transactions on*, **C-36**(5):547–553, May 1987. 22
- [39] KHALED DAY AND ANAND TRIPATHI. A comparative study of topological properties of hypercubes and star graphs. *Parallel and Distributed Systems, IEEE Transactions on*, **5**(1):31–38, 1994. 25
- [40] GIANLUCA DE MARCO AND UGO VACCARO. Broadcasting in hypercubes and star graphs with dynamic faults. *Information Processing Letters*, **66**(6):321–326, 1998. 16
- [41] DANNY DOLEV, JOE HALPERN, BARBARA SIMONS, AND RAY STRONG. A new look at fault tolerant network routing. In *Proceedings of the sixteenth annual ACM symposium on Theory of computing*, pages 526–535. ACM, 1984. 16
- [42] JOSE DUATO, SUDHAKAR YALAMANCHILI, AND LIONEL M NI. *Interconnection networks: An engineering approach*. Morgan Kaufmann, 2003. 4, 19, 21, 25
- [43] THOMAS H. DUNIGAN. Performance of the intel ipsc/860 and ncube 6400 hypercubes. *Parallel Computing*, **17**(10):1285–1302, 1991. 90
- [44] KEMAL EFE. A variation on the hypercube with lower diameter. *Computers, IEEE Transactions on*, **40**(11):1312–1316, 1991.
- [45] AHMED EL-AMAWY AND SHAHRAM LATIFI. Properties and performance of folded hypercubes. *Parallel and Distributed Systems, IEEE Transactions on*, **2**(1):31–42, 1991. 31, 75
- [46] DROR G FEITELSON AND BILL NITZBERG. Job characteristics of a production parallel scientific workload on the nasa ames ipsc/860. In *Job Scheduling Strategies for Parallel Processing*, pages 337–360. Springer, 1995. 90

## BIBLIOGRAPHY

---

- [47] P.T. GAUGHAN, B.V. DAO, S. YALAMANCHILI, AND D.E. SCHIMMEL. Distributed, deadlock-free routing in faulty, pipelined, direct interconnection networks. *Computers, IEEE Transactions on*, **45**(6):651–665, Jun 1996. 19
- [48] P.T. GAUGHAN AND S. YALAMANCHILI. Adaptive routing protocols for hypercube interconnection networks. *Computer*, **26**(5):12–23, May 1993. 6, 23
- [49] M.E. GOMEZ, N.A. NORDBOTTEN, J. FLICH, P. LOPEZ, A. ROBLES, J. DUTATO, T. SKEIE, AND O. LYSNE. A routing methodology for achieving fault tolerance in direct networks. *Computers, IEEE Transactions on*, **55**(4):400–415, April 2006. 70
- [50] DEVENDRA GOYAL AND J CAFFERY. Partitioning avoidance in mobile ad hoc networks using network survivability concepts. In *Computers and Communications, 2002. Proceedings. ISCC 2002. Seventh International Symposium on*, pages 553–558. IEEE, 2002. 16
- [51] PETR GREGOR. Recursive fault-tolerance of fibonacci cube in hypercubes. *Discrete mathematics*, **306**(13):1327–1341, 2006. 28
- [52] Q-P GU AND SHIETUNG PENG. Optimal algorithms for node-to-node fault tolerant routing in hypercubes. *The Computer Journal*, **39**(7):626–629, 1996. 8, 31
- [53] QIAN PING GU, SATOSHI OKAWA, AND PENG SHIETUNG. Set-to-set fault tolerant routing in hypercubes\*. *IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences*, **79**(4):483–488, 1996. 41
- [54] QIAN-PING GU AND S. PENG. Unicast in hypercubes with large number of faulty nodes. *Parallel and Distributed Systems, IEEE Transactions on*, **10**(10):964–975, Oct 1999. 31
- [55] QIAN-PING GU AND SHIETUNG PENG. Node-to-set and set-to-set cluster fault tolerant routing in hypercubes. *Parallel Computing*, **24**(8):1245–1261, 1998. 41, 75

- [56] QIAN-PING GU AND SHIETUNG PENG. Unicast in hypercubes with large number of faulty nodes. *Parallel and Distributed Systems, IEEE Transactions on*, **10**(10):964–975, 1999. 8
- [57] QIAN-PING GU AND SHIETUNG PENG. An efficient algorithm for the k-pairwise disjoint paths problem in hypercubes. *Journal of Parallel and Distributed Computing*, **60**(6):764–774, 2000. 31
- [58] S. GUNES, N. YILMAZ, AND E. YALDIZ. Fault tolerant unicast routing algorithm based on parallel branching method for faulty hypercube. In *Electronics, Circuits and Systems, 2001. ICECS 2001. The 8th IEEE International Conference on*, **1**, pages 103–106, 2001. 31
- [59] SALIH GÜNES, NIHAT YILMAZ, AND ERCAN YALDIZ. Fault tolerant unicast routing algorithm based on parallel branching method for faulty hypercube. In *Electronics, Circuits and Systems, 2001. ICECS 2001. The 8th IEEE International Conference on*, **1**, pages 103–106. IEEE, 2001. 8
- [60] CHUANXIONG GUO, HAITAO WU, KUN TAN, LEI SHI, YONGGUANG ZHANG, AND SONGWU LU. Dcell: A scalable and fault-tolerant network structure for data centers. In *Proceedings of the ACM SIGCOMM 2008 Conference on Data Communication*, SIGCOMM '08, pages 75–86, New York, NY, USA, 2008. ACM. 16
- [61] JOACHIM HEIN, FIONA REID, LORNA SMITH, IAN BUSH, MARTYN GUEST, AND PAUL SHERWOOD. On the performance of molecular dynamics applications on current high-end systems. *Philosophical Transactions of the Royal Society of London A: Mathematical, Physical and Engineering Sciences*, **363**(1833):1987–1998, 2005. 2
- [62] SUN-YUAN HSIEH AND NAI-WEN CHANG. Extended fault-tolerant cycle embedding in faulty hypercubes. *Reliability, IEEE Transactions on*, **58**(4):702–710, 2009. 41
- [63] SUN-YUAN HSIEH AND YU-FEN WENG. Fault-tolerant embedding of pairwise independent hamiltonian paths on a faulty hypercube with edge faults. *Theory of Computing Systems*, **45**(2):407–425, 2009. 41

## BIBLIOGRAPHY

---

- [64] ANDREAS HUCK. Independent trees in planar graphs independent trees. *Graphs and Combinatorics*, **15**(1):29–77, 1999. 92
- [65] ALON ITAI AND MICHAEL RODEH. The multi-tree approach to reliability in distributed networks. *Information and Computation*, **79**(1):43–59, 1988. 92
- [66] BA IZADI AND F ÖZGÜNER. Real-time fault-tolerant hypercube multicomputer. *IEE Proceedings-Computers and Digital Techniques*, **149**(5):197–202, 2002. 28
- [67] MICHAEL JURCZYK, HOWARD JAY SIEGEL, AND CRAIG STUNKEL. *Interconnection Networks for Parallel Computers*. John Wiley and Sons, Inc., 2001. 19
- [68] KEIICHI KANEKO. Fault-tolerant routing algorithms for hypercube interconnection networks. *IEICE TRANSACTIONS on Information and Systems*, **84**(1):121–128, 2001. 35
- [69] M. KOIBUCHI, H. MATSUTANI, H. AMANO, D.F. HSU, AND H. CASANOVA. A case for random shortcut topologies for hpc interconnects. In *Computer Architecture (ISCA), 2012 39th Annual International Symposium on*, pages 177–188, June 2012. 70
- [70] ISRAEL KOREN AND C MANI KRISHNA. *Fault-tolerant systems*. Morgan Kaufmann, 2010. 5
- [71] MS KRISHNAMOORTHY AND B KRISHNAMURTHY. Fault diameter of interconnection networks. *Computers & Mathematics with Applications*, **13**(5):577–582, 1987. 31
- [72] CHENG-NAN LAI. Optimal construction of all shortest node-disjoint paths in hypercubes with applications. *Parallel and Distributed Systems, IEEE Transactions on*, **23**(6):1129–1134, June 2012. 75, 86
- [73] CHENG-NAN LAI. Two conditions for reducing the maximal length of node-disjoint paths in hypercubes. *Theoretical Computer Science*, **418**(0):82–91, 2012. 9, 31
- [74] YOURAN LAN. Fault-tolerant multi-destination routing in hypercube multicomputers. In *Distributed Computing Systems, 1992., Proceedings of the 12th International Conference on*, pages 632–639, Jun 1992. 31



- [75] YOURAN LAN, ABDOL-HOSSEIN ESFAHANIAN, AND LIONEL M. NI. Multicast in hypercube multiprocessors. *Journal of Parallel and Distributed Computing*, **8**(1):30–41, 1990. 36
- [76] Y.R. LAN. Adaptive fault-tolerant multicast in hypercube multicomputers. *Journal of Parallel and Distributed Computing*, **23**(1):80–93, 1994. 31
- [77] JEAN-CLAUDE LAPRIE. Dependable computing: Concepts, limits, challenges. In *Special Issue of the 25th International Symposium On Fault-Tolerant Computing*, pages 42–54, 1995. 12
- [78] SHAHRAM LATIFI. Combinatorial analysis of the fault-diameter of the n-cube. *Computers, IEEE Transactions on*, **42**(1):27–33, 1993. 31
- [79] SHAHRAM LATIFI, HYOSUN KO, AND PRADIP K SRIMANI. Node-to-set vertex disjoint paths in hypercube networks. *Computer Science Tech. Rep. CS-98-107, Colorado State University*, 1998. 31, 75
- [80] SUNG-JU LEE AND M. GERLA. Split multipath routing with maximally disjoint paths in ad hoc networks. In *Communications, 2001. ICC 2001. IEEE International Conference on*, **10**, pages 3201–3205, 2001. 16
- [81] T.C. LEE AND J.P. HAYES. A fault-tolerant communication scheme for hypercube computers. *Computers, IEEE Transactions on*, **41**(10):1242–1256, Oct 1992. 31
- [82] F THOMSON LEIGHTON. *Introduction to parallel algorithms and architectures*, **188**. Morgan Kaufmann San Francisco, 1992. 19
- [83] A.C. LIANG, S. BHATTACHARYA, AND W.T. TSAI. Fault-tolerant multicasting on hypercubes. *Journal of Parallel and Distributed Computing*, **23**(3):418–428, 1994. 31
- [84] GLENN R LUECKE AND WEI-HUA LIN. Scalability and performance of openmp and mpi on a 128-processor sgi origin 2000. *Concurrency and Computation: Practice and Experience*, **13**(10):905–928, 2001. 90

## BIBLIOGRAPHY

---

- [85] SESHU MADHAVAPEDDY AND IVAN HAL SUDBOROUGH. A topological property of hypercubes: node disjoint paths. In *Parallel and Distributed Processing, 1990. Proceedings of the Second IEEE Symposium on*, pages 532–539. IEEE, 1990. 26, 31
- [86] QUTAIBAH M. MALLUHI AND MAGDY A. BAYOUMI. The hierarchical hypercube: A new interconnection topology for massively parallel systems. *Parallel and Distributed Systems, IEEE Transactions on*, **5**(1):17–30, 1994. 75
- [87] ALLEN D MALONY AND DANIEL A REED. A hardware-based performance monitor for the intel ipsc/2 hypercube. In *ACM SIGARCH Computer Architecture News*, **18**, pages 213–226. ACM, 1990. 90
- [88] MAX MANFRIN, MAURO BIRATTARI, THOMAS STÜTZLE, AND MARCO DORIGO. Parallel ant colony optimization for the traveling salesman problem. In *Ant Colony Optimization and Swarm Intelligence*, pages 224–234. Springer, 2006. 30
- [89] GIANLUCA DE MARCO AND UGO VACCARO. Broadcasting in hypercubes and star graphs with dynamic faults. *Information Processing Letters*, **66**(6):321–326, 1998. 92
- [90] CLAUDIO MARTINI, MAURO MORANDO, AND SANDRO RIDELLA. Caltech hypercube mind computer performances measurements in a physical mathematical application. In WOLFGANG HNDLER, DIETER HAUPT, ROLF JELTSCH, WILFRIED JULING, AND OTTO LANGE, editors, *CONPAR 86*, **237** of *Lecture Notes in Computer Science*, pages 128–132. Springer Berlin Heidelberg. 90
- [91] P.K. MCKINLEY, HONG XU, A.-H. ESFAHANIAN, AND L.M. NI. Unicast-based multicast communication in wormhole-routed networks. *Parallel and Distributed Systems, IEEE Transactions on*, **5**(12):1252–1265, Dec 1994. 31
- [92] L.M. NI AND P.K. MCKINLEY. A survey of wormhole routing techniques in direct networks. *Computer*, **26**(2):62–76, Feb 1993. 9, 23
- [93] KOJI OBOKATA, YUKIHIRO IWASAKI, BAO FENG, AND YOSHIHIDE IGARASHI. Independent spanning trees of product graphs and their construction. *IEICE Transactions on Fundamentals of Electronics, Communications and Computer Sciences*, **79**(11):1894–1903, 1996. 92, 93

- [94] BEHROOZ PARHAMI. *Introduction to parallel processing: algorithms and architectures*, **1**. Springer Science & Business Media, 1999. 41
- [95] CHONG-DAE PARK AND KYUNG-YONG CHWA. Hamiltonian properties on the class of hypercube-like networks. *Information Processing Letters*, **91**(1):11–17, 2004.
- [96] M. PEERCY AND P. BANERJEE. Distributed algorithms for shortest-path, deadlock-free routing and broadcasting in arbitrarily faulty hypercubes. In *Fault-Tolerant Computing, 1990. FTCS-20. Digest of Papers., 20th International Symposium*, pages 218–225, June 1990. 31
- [97] DAVID PELEG AND BARBARA SIMONS. On fault tolerant routings in general networks. In *Proceedings of the fifth annual ACM symposium on Principles of distributed computing*, pages 98–107. ACM, 1986. 16
- [98] DHIRAJ K PRADHAN. *Fault-tolerant computer system design*. Prentice-Hall, Upper Saddle River, NJ, 1996. 9
- [99] KE QIU. An efficient disjoint shortest paths routing algorithm for the hypercube. *2013 International Conference on Parallel and Distributed Systems*, **0**:43–47, 2008. 41
- [100] C.S. RAGHAVENDRA, P.-J. YANG, AND S.-B. TIEN. Free dimensions—an effective approach to achieving fault tolerance in hypercube. In *Fault-Tolerant Computing, 1992. FTCS-22. Digest of Papers., Twenty-Second International Symposium on*, pages 170–177, July 1992. 28, 31
- [101] P. RAMANATHAN AND K.G. SHIN. Reliable broadcast in hypercube multicomputers. *Computers, IEEE Transactions on*, **37**(12):1654–1657, Dec 1988. 31
- [102] PARAMESWARAN RAMANATHAN AND KANG G. SHIN. Reliable broadcast in hypercube multicomputers. *Computers, IEEE Transactions on*, **37**(12):1654–1657, 1988. 90
- [103] ANNE VINTER RATZER, LISA WELLS, HENRY MICHAEL LASSEN, MADSEN LAURSEN, JACOB FRANK QVORTRUP, MARTIN STIG STISSING, MICHAEL

## BIBLIOGRAPHY

---

- WESTERGAARD, SØREN CHRISTENSEN, AND KURT JENSEN. Cpn tools for editing, simulating, and analysing coloured petri nets. In *Applications and Theory of Petri Nets 2003*, pages 450–462. Springer, 2003. 57
- [104] CRISPÍN GÓMEZ REQUENA, MARÍA ENGRACIA GÓMEZ REQUENA, PEDRO JUAN LÓPEZ RODRÍGUEZ, AND JOSÉ FRANCISCO DUATO MARÍN. Ft<sup>2</sup>ei: A dynamic fault-tolerant routing methodology for fat trees with exclusion intervals. *Parallel and Distributed Systems, IEEE Transactions on*, **20**(6):802–817, 2009. 31
- [105] ADELE A. RESCIGNO. Fault-tolerant parallel communication in the star network. *Parallel processing letters*, **7**(01):57–68, 1997. 16
- [106] L.A. RODRIGUES. Fault-tolerant broadcast algorithms for the virtual hypercube topology. In *Dependable Systems and Networks Workshop (DSN-W), 2013 43rd Annual IEEE/IFIP Conference on*, pages 1–4, June 2013. 38
- [107] Y. SAAD AND M.H. SCHULTZ. Topological properties of hypercubes. *Computers, IEEE Transactions on*, **37**(7):867–872, Jul 1988. 9, 31, 41, 48, 51, 74
- [108] TOSHIHIKO SASAMA, HIROSHI MASUYAMA, AND TETSUO ICHIMORI. On fault tolerance of hypercubes using subcubes. *International Journal of Reliability, Quality and Safety Engineering*, **09**(02):151–161, 2002. 32, 76
- [109] GILAD SHAINER, TONG LIU, JOHN MICHALAKES, JACOB LIBERMAN, JEFF LAYTON, ONUR CELEBIOGLU, SCOT A SCHULTZ, JOSHUA MORA, AND DAVID COWNIE. Weather research and forecast (wrf) model performance and profiling analysis on advanced multi-core hpc clusters. *The 10th LCI International Conference on High-Performance Clustered Computing. Boulder, CO*, 2009. 2
- [110] JANG-PING SHEU AND MING-YANG SU. A multicast algorithm for hypercube multiprocessors. *Parallel Algorithms and Applications*, **2**(4):277–290, 1994. 31
- [111] H.J. SIEGEL, W.G. NATION, C.P. KRUSKAL, AND L.M. NAPOLITANO. Using the multistage cube network topology in parallel supercomputers. *Proceedings of the IEEE*, **77**(12):1932–1953, Dec 1989. 20

- [112] O. SINANOGLU, M.H. KARAATA, AND B. ALBDAIWI. An inherently stabilizing algorithm for node-to-node routing over all shortest node-disjoint paths in hypercube networks. *Computers, IEEE Transactions on*, **59**(7):995–999, July 2010. 8, 41
- [113] IVAN STOJMENOVIC AND XU LIN. Loop-free hybrid single-path/flooding routing algorithms with guaranteed delivery for wireless networks. *Parallel and Distributed Systems, IEEE Transactions on*, **12**(10):1023–1032, 2001. 16
- [114] HERBERT SULLIVAN AND T R BASHKOW. A large scale, homogeneous, fully distributed parallel machine, i. *SIGARCH Comput. Archit. News*, **5**(7):105–117, March 1977. 91
- [115] SHYUE-MING TANG, YUE-LI WANG, AND YUNG-HO LEU. Optimal independent spanning trees on hypercubes. *J. Inf. Sci. Eng.*, **20**(1):143–156, 2004. 9, 92, 93
- [116] SHYUE-MING TANG, JINN-SHYONG YANG, YUE-LI WANG, AND JOU-MING CHANG. Independent spanning trees on multidimensional torus networks. *Computers, IEEE Transactions on*, **59**(1):93–102, 2010. 92
- [117] RONALD C TAYLOR. An overview of the hadoop/mapreduce/hbase framework and its current applications in bioinformatics. *BMC bioinformatics*, **11**(Suppl 12):S1, 2010. 2
- [118] LOKENDRA SINGH UMRAO, DHARMENDRA PRASAD MAHATO, AND RAVI SHANKAR SINGH. Recent trends in parallel computing. In *Encyclopedia of Information Science and Technology, Third Edition*, pages 3580–3589. Hershey: IGI Global. 2
- [119] LOKENDRA SINGH UMRAO AND RAVI SHANKAR SINGH. *International Journal of Computer, Electrical, Automation, Control and Information Engineering*, **9**(2):576–580, 2015. 30
- [120] LOKENDRA SINGH UMRAO AND RAVI SHANKAR SINGH. Fault-tolerant routing over shortest node-disjoint paths in hypercubes. *International Journal of Parallel, Emergent and Distributed Systems*, **0**(0):1–11, 2015. 53

## BIBLIOGRAPHY

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- [121] JEERAPORN WERAPUN, SARUN INTAKOSUM, AND VEERA BOONJING. An efficient parallel construction of optimal independent spanning trees on hypercubes. *Journal of Parallel and Distributed Computing*, **72**(12):1713–1724, 2012. 9
- [122] MICHAEL WESTERGAARD AND LARS MICHAEL KRISTENSEN. The access/cpn framework: A tool for interacting with the cpn tools simulator. In *Applications and Theory of Petri Nets*, pages 313–322. Springer, 2009. 57
- [123] JIE WU. Reliable unicasting in faulty hypercubes using safety levels. *Computers, IEEE Transactions on*, **46**(2):241–247, Feb 1997. 31
- [124] JIE WU AND E.B. FERNANDEZ. Reliable broadcasting in faulty hypercube computers. In *Reliable Distributed Systems, 1992. Proceedings., 11th Symposium on*, pages 122–129, Oct 1992. 31
- [125] RUEI-YU WU, GEN-HUEY CHEN, YU-LIANG KUO, AND GERARD J CHANG. Node-disjoint paths in hierarchical hypercube networks. *Information Sciences*, **177**(19):4200–4207, 2007. 16, 31
- [126] DONG XIANG. Fault-tolerant routing in hypercube multicomputers using local safety information. *Parallel and Distributed Systems, IEEE Transactions on*, **12**(9):942–951, June 2001. 31, 70
- [127] DONG XIANG, AI CHEN, AND JIAGUANG SUN. Fault-tolerant routing and multicasting in hypercubes using a partial path set-up. *Parallel Computing*, **31**(34):389–411, 2005. 9, 31
- [128] DONG XIANG, AI CHEN, AND JIE WU. Local-safety-information-based broadcasting in hypercube multicomputers with node and link faults. *Journal of Interconnection Networks*, **02**(03):365–378, 2001. 31
- [129] DONG XIANG, YUELI ZHANG, AND JIA-GUANG SUN. Unicast-based fault-tolerant multicasting in wormhole-routed hypercubes. *Journal of Systems Architecture*, **54**(12):1164–1178, 2008. 31
- [130] YE XIAOTAO, LV AILI, AND ZHAO LIN. Research of high performance computing with clouds. In *Proc. International Symposium Computer Science and Computational Technology*, pages 289–293. Citeseer, 2010. 2

- [131] JINN-SHYONG YANG, JOU-MING CHANG, SHYUE-MING TANG, AND YUE-LI WANG. Constructing multiple independent spanning trees on recursive circulant graphs  $g(2m, 2)$ . *International Journal of Foundations of Computer Science*, **21**(01):73–90, 2010. 16, 92
- [132] JINN-SHYONG YANG, SHYUE-MING TANG, JOU-MING CHANG, AND YUE-LI WANG. Parallel construction of optimal independent spanning trees on hypercubes. *Parallel Computing*, **33**(1):73–79, 2007. 9, 92, 93
- [133] PEL-JI YANG, SING-BAN TIEN, AND CS RAGHAVENDRA. Embedding of rings and meshes onto faulty hypercubes using free dimensions. *Computers, IEEE Transactions on*, **43**(5):608–613, 1994. 28
- [134] YI-JEN YANG. The security of electronic banking. *national information*, 1997. 2
- [135] AVRAM ZEHAVID AND ALON ITAI. Three tree-paths. *Journal of Graph Theory*, **13**(2):175–188, 1989. 92