Publications of R. P. Brent

Abbreviations

ACM:	Association for Computing Machinery
AMS:	American Mathematical Society
ANU:	Australian National University, Canberra, Australia
Area 4:	ANU-Fujitsu Vector/Parallel Mathematical Software Project
CMA:	Centre for Mathematical Analysis
CMU:	Carnegie-Mellon University, Pittsburgh, Pennsylvania
CR:	Computing Reviews
CSL:	Computer Sciences Laboratory
DCS:	Department of Computer Science
IBM Research:	IBM Thomas J. Watson Research Center, Yorktown Heights, NY
IEEE:	Institute of Electrical and Electronics Engineers
MR:	Mathematical Reviews
NTIS:	National Technical Information Service (USA)
SIAM:	Society for Industrial and Applied Mathematics
Stanford:	Stanford University, Stanford, California
UMT	Unpublished Mathematical Tables
Zbl:	Zentralblatt für Mathematik

1. M. P. C. Legg and R. P. Brent, Automatic contouring, *Proceedings of the Fourth Australian Computer Conference*, Australian Computer Society, Adelaide, 1969, 467-468. CR 12#21982.
2. R. P. Brent, *Algorithms for matrix multiplication*, Report TR-CS-70-157, DCS, Stanford (March 1970), 52 *pp.* Available from NTIS, #AD705509. Page images available from `ftp://elib.stanford.edu/pub/reports/cs/tr/70/157/GIF-PAGE-IMAGES/`
3. R. P. Brent, On the addition of binary numbers, *IEEE Transactions on Computers* C-19 (1970), 758-759. CR 12#20898.
4. R. P. Brent, Error analysis of algorithms for matrix multiplication and triangular decomposition using Winograd's identity, *Numerische Mathematik* 16 (1970), 145-156. MR 43#5702, CR 12#21408.
5. R. P. Brent, An algorithm with guaranteed convergence for finding a zero of a function, *Computer J.* 14 (1971), 422-425. MR 49#4234, Zbl 231.65046.
6. R. P. Brent, *Algorithms for finding zeros and extrema of functions without calculating derivatives*, Report TR CS 198, DCS, Stanford (February 1971), 313 *pp.* (Ph. D. thesis, available from NTIS, #AD726170.)
7. R. P. Brent, A new algorithm for minimizing a function of several variables without calculating derivatives, in *Optimization* (edited by R. S. Anderssen, L. S. Jennings and D. M. Ryan), University of Queensland Press, Brisbane, 1972, 14-25. MR 52#2574, 52#9601, Zbl 311.90065.
8. R. P. Brent, On the Davidenko-Branin method for solving simultaneous nonlinear equations, *IBM J. Research and Development* 16 (1972), 434-436. CR 14#24419, MR 48#12817, Zbl 276.65023. Also appeared as "A note on the Davidenko-Branin method for solving simultaneous nonlinear equations", Report TR RC 3506, IBM Research (August 1971), 7 *pp.*
9. R. P. Brent, A modified linear scatter storage technique, *IBM Technical Disclosure Bulletin* 14, 11 (1972), 3489.
10. R. P. Brent, An optimal secant method for solving systems of nonlinear equations, *IBM Technical Disclosure Bulletin* 15, 4 (1972), 1216-1217.
11. R. P. Brent, *Algorithms for Minimization without Derivatives*, Prentice-Hall, Englewood Cliffs, New Jersey, 1973, 195 *pp.* ISBN 0-13-022335-2. Reviewed in: *American Scientist* 61 (May-June 1973), 374; *Mathematical Programming* 4 (1973), 349; *Computer J.* 16 (1973), 314; *Mathematics of Computation* 28 (1974), 865-866; CR 15#26544; MR 49#4251; Zbl 245.65032. Errata: *Mathematics of Computation* TE 520, 29 (1975), 1166. MR 51#7283. A preliminary version appeared as [6].
12. R. P. Brent, The computational complexity of iterative methods for systems of nonlinear equations, in *Complexity of Computer Computations* (edited by R. E. Miller and J. W. Thatcher), Plenum Press, New York, 1972, 61-71. MR 51#9575, 52#4703.
13. R. P. Brent, Reducing the retrieval time of scatter storage techniques, *Communications of the ACM* 16 (1973), 105-109. Zbl 251.68019. Also appeared as "A modified linear scatter storage technique", Report TR RC 3460, IBM Research (July 1971), 20 *pp.* See also "Comment on Brent's scatter storage algorithm", *Communications of the ACM* 16 (1973), 703.
14. R. P. Brent, Some efficient algorithms for solving systems of nonlinear equations, *SIAM J. Numerical Analysis* 10 (1973), 327-344 (George E. Forsythe memorial issue). MR 48#10096, CR 17#29965, Zbl 258.65051. A preliminary version appeared as *On maximizing the efficiency of algorithms for solving systems of nonlinear equations*, Report TR RC 3725, IBM Research (February 1972), 33 *pp.*
15. R. P. Brent, D. J. Kuck and K. Maruyama, The parallel evaluation of arithmetic expressions without division, *IEEE Transactions on Computers* C-22 (1973), 532-534. MR 50#11843.
16. R. P. Brent, S. Winograd and P. Wolfe, Optimal iterative processes for rootfinding, *Numerische Mathematik* 20 (1973), 327-341. CR 15#26753, MR 47#6079. A preliminary version appeared as Report TR RC 3960, IBM Research (August 1972), 29 *pp.*
17. R. P. Brent, On the precision attainable with various floating-point number systems, *IEEE Transactions on Computers* C-22 (1973), 601-607. CR 14#25960, Zbl 261.65036. Also appeared as Report TR RC 3751, IBM Research (February 1972), 28 *pp.*
18. R. P. Brent, The parallel evaluation of arithmetic expressions in logarithmic time, in *Complexity of Sequential and Parallel Numerical Algorithms* (edited by J. F. Traub), Academic Press, New York, 1973, 83-102. CR 15#26540, 15#27335; MR 50#15432; Zbl 273.68037.
19. R. P. Brent, The first occurrence of large gaps between successive primes, *Mathematics of Computation* 27 (1973), 959-963. MR 48#8360, Zbl 269.10002. For a sequel see [57].
20. R. P. Brent, Sources of error in computation, in *Error, Approximation and Accuracy* (edited by F. R. de Hoog and C. L. Jarvis), University of Queensland Press, Brisbane, 1973, 122-128. MR 52#2124, 54#9069; Zbl 312.65035.

21. R. P. Brent, The distribution of small gaps between successive primes, *Mathematics of Computation* 28 (1974), 315-324. MR 48#8356, Zbl 274.10001. A preliminary version appeared as "Empirical evidence for a proposed distribution of small prime gaps", Report TR CS 123, DCS, Stanford (February 1969), 18 *pp.*
22. R. P. Brent, The parallel evaluation of general arithmetic expressions, *J. ACM* 21 (1974), 201-206. CR 15#27055, MR 58#31996, Zbl 276.68010.
23. R. P. Brent, Algorithm 488: A Gaussian pseudo-random number generator [G5], *Communications of the ACM* 17 (1974), 704-706. Zbl 292.65003.
24. R. P. Brent, Irregularities in the distribution of primes and twin primes, *Mathematics of Computation* 29 (1975), 43-56 (Derrick H. Lehmer special issue). MR 50#1791, 51#5522; Zbl 295.10002. Errata: *ibid* 30 (1976), 198. MR 53#302. See also "Tables concerning irregularities in the distribution of primes and twin primes", UMT 4, *ibid* 29 (1975), 331; and "Tables concerning irregularities in the distribution of primes and twin primes to 10^{11}", UMT 21, *ibid* 30 (1976), 379.
25. R. P. Brent, *Numerical solution of nonlinear equations*, DCS, Stanford (March 1975), 189 *pp.*
26. R. P. Brent, Some high-order zero-finding methods using almost orthogonal polynomials, *J. Australian Mathematical Society (Series B)* 19 (1975), 1-29. MR 52#16000, Zbl 333.65022. Also appeared as "Efficient methods for finding zeros of functions whose derivatives are easy to evaluate", Technical Report, DCS, CMU (December 1974), 62 *pp.*
27. R. P. Brent, A class of optimal-order zero-finding methods using derivative evaluations, in *Analytic Computational Complexity* (edited by J. F. Traub), Academic Press, 1975, 59-73. Reviewed in *Australian Computer J.* 9 (1977), 100; MR 52#15938, 54#9073; Zbl 342.65030. Also appeared as a Technical Report, DCS, CMU (June 1975), 15 *pp.*
28. R. P. Brent, Multiple-precision zero-finding methods and the complexity of elementary function evaluation, in *Analytic Computational Complexity* (edited by J. F. Traub), Academic Press, New York, 1975, 151-176. Reviewed in *Australian Computer J.* 9 (1977), 100; MR 52#15938, 54#11843; Zbl 342.65031. Also appeared as a Technical Report, DCS, CMU (July 1975), 26 *pp.*
29. R. P. Brent and H. T. Kung, $O((n \log n)^{3/2})$ algorithms for composition and reversion of power series, in *Analytic Computational Complexity* (edited by J. F. Traub), Academic Press, New York, 1975, 217-225. Reviewed in *Australian Computer J.* 9 (1977), 100; MR 52#15938, 55#1699; Zbl 342.65010. Also appeared as a Technical Report, DCS, CMU (May 1975), 7 *pp.*
30. J. P. Abbott and R. P. Brent, Fast local convergence with single and multistep methods for nonlinear equations, *J. Australian Mathematical Society (Series B)* 19 (1975), 173-199. MR 55#4677; Zbl 359.65044, 389.65037. Errata: *ibid* 20 (1977), 254. MR 58#13673.
31. R. S. Anderssen and R. P. Brent (editors), *The Complexity of Computational Problem Solving*, University of Queensland Press, Brisbane, 1976, 262 *pp.* LC 76-374278, ISBN 0-7022-1213-X. Reviewed in *Computer J.* 21 (1978), 242.
32. R. P. Brent, The complexity of multiple-precision arithmetic, in [31], 126-165.
33. R. S. Anderssen, R. P. Brent, D. J. Daley and P. A. P. Moran, Concerning $\int_0^1 \cdots \int_0^1 ({x_1}^2 + \cdots + {x_k}^2)^{1/2} dx_1 \ldots dx_k$ and a Taylor series method, *SIAM J. Applied Mathematics* 30 (1976), 22-30. MR 52#15773, Zbl 337.65022.

34. R. P. Brent, Fast multiple-precision evaluation of elementary functions, *J. ACM* 23 (1976), 242-251. MR 52#16111, Zbl 324.65018. Also appeared as Report TR STAN-CS-75-515, DCS, Stanford (August 1975), 22 *pp.* See also *Computer Bulletin (Series 2)* 29 (September 1981), 26-27; and *ibid* 30 (December 1981), 9-10.
35. R. P. Brent, *MP Users Guide*, Report TR 54, Computer Centre, ANU (September 1976), 53 *pp.* Revisions published as *MP Users Guide (second edition)*, Computing Research Group, ANU (August 1978), 44*pp.*; *MP Users Guide (third edition)*, TR-CS-79-08, DCS, ANU (December 1979), 73*pp.*; and *MP Users Guide (fourth edition)*, TR-CS-81-08, DCS, ANU (June 1981), 73 *pp.*
36. R. P. Brent, *Knuth's constants to 1000 decimal and 1100 octal places*, Report TR 47, Computer Centre, ANU (September 1975), 25 *pp.* See also UMT 30, *Mathematics of Computation* 30 (1976), 668.
37. R. P. Brent, Analysis of the binary Euclidean algorithm, in *New Directions and Recent Results in Algorithms and Complexity* (edited by J. F. Traub), Academic Press, New York, 1976, 321-355. Reviewed in *Australian Computer J.* 10 (1978), 76-77; MR 54#14417, 55#11701; Zbl 363.00013, 373.68040. Also appeared as a Technical Report, DCS, CMU (June 1976), 35 *pp.* Extended abstract appeared in *SIGSAM Bulletin* (May 1976). For errata see [183].
38. R. Towle and R. P. Brent, On the time required to parse an arithmetic statement for parallel processing, in *Proceedings of the 1976 International Conference on Parallel Processing* (edited by P.H. Enslow), IEEE, New York, 1976, 254. (IEEE Catalog #76CH1127-0C.)
39. R. P. Brent and H. T. Kung, Fast algorithms for composition and reversion of multivariate power series, in *Proceedings of a Conference on Theoretical Computer Science* held at the University of Waterloo, DCS, University of Waterloo, Waterloo, Ontario (August 1977), 149-158. Zbl 404.00019, 411.68043.
40. R. P. Brent, Computation of the regular continued fraction for Euler's constant, *Mathematics of Computation* 31 (1977), 771-777. MR 55#9490, Zbl 369.10002. See also "γ and $\exp(\gamma)$ to 20700D and their regular continued fractions to 20000 partial quotients", UMT 1, *ibid* 32 (1978), 311. For a sequel see [49].
41. A. H. Sameh and R. P. Brent, Solving triangular systems on a parallel computer, *SIAM J. Numerical Analysis* 14 (1977), 1101-1113. MR 56#17026, Zbl 375.65016. Also appeared as Report TR UIUCDCS-R-75-766, DCS, University of Illinois, Urbana, Illinois (November 1975), 18 *pp.*
42. R. P. Brent, A Fortran multiple-precision arithmetic package, *ACM Transactions on Mathematical Software* 4 (1978), 57-70. CR 20#34962. Also appeared as a Technical Report, DCS, CMU (May 1976), 29 *pp.*
43. R. P. Brent, Algorithm 524: MP, a Fortran multiple-precision arithmetic package [A1], *ACM Transactions on Mathematical Software* 4 (1978), 71-81. See also "Remark on Algorithm 524", *ibid* 5 (1979), 518-519.
44. J. P. Abbott and R. P. Brent, A note on continuation methods for the solution of nonlinear equations, *J. Australian Mathematical Society (Series B)* 20 (1978), 157-164. MR 58#13672, Zbl 392.65017.
45. R. P. Brent and H. T. Kung, Fast algorithms for manipulating formal power series, *J. ACM* 25 (1978), 581-595. CR 20#34535, MR 58#25090, Zbl 388.68052. Also appeared as a Technical Report, DCS, CMU (January 1976), 38 *pp.*

46. R. P. Brent, T. Dwyer, S. J. Edwards, A. D. Glenn, D. A. Hawking, A. J. Hurst, C. W. Johnson, N. Justusson, T. Kelly, B. P. Molinari, D. L. Poole, J. M. Robson and I. R. Simpson, Comments on the draft Pascal standard, *Australian Computer Science Communications* 1 (1979), 310-317. Also appeared as Report TR-CS-79-09, DCS, ANU (October 1979), 9 *pp.*
47. R. P. Brent, On the zeros of the Riemann zeta function in the critical strip, *Mathematics of Computation* 33 (1979), 1361-1372. MR 80g:10033, Zbl 422.10031. A preliminary version appeared as "Computation of the zeros of the Riemann zeta function in the critical strip", Report TR CMU-CS-78-148, DCS, CMU (November 1978), 27 *pp.* A progress report appeared as "The first 40,000,000 zeros of the Riemann zeta function lie on the critical line", *AMS Notices* 24 (1977), A-417, 77T-A161. See also RMT 11, *Mathematics of Computation* 31 (1977), 803-804. For a sequel see [70].
48. R. P. Brent and R. A. Jarvis (editors), *Proceedings of the Third Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 2, 1 (January 1980), 222 *pp.*
49. R. P. Brent and E. M. McMillan, Some new algorithms for high-precision computation of Euler's constant, *Mathematics of Computation* 34 (1980), 305-312. MR 82g:10002. Also appeared as Report TR LBL-8729, Lawrence Berkeley Laboratory; and as Report TR-CS-79-03, DCS, ANU (January 1979), 16 *pp.* See also "Euler's constant and its exponential to 30,100 decimals", and "The first 29,000 partial quotients in the regular continued fraction for Euler's constant and its exponential", *Mathematics of Computation* UMT File.
50. R. P. Brent and J. F. Traub, On the complexity of composition and generalized composition of power series, *SIAM J. Computing* 9 (1980), 54-66. MR 81b:68042. Also appeared as Report TR CMU-CS-78-128, DCS, CMU (May 1978), 34 *pp.* Abstract appeared in *SIGSAM Bulletin* 12, 2 (May 1978), 9.
51. R. P. Brent, An improved Monte Carlo factorization algorithm, *BIT* 20 (1980), 176-184. MR 82a:10007, Zbl 439.65001. Also appeared as "Analysis of some new cycle finding and factorization algorithms", Report TR-CS-79-11, DCS, ANU (November 1979), 10 *pp.*
52. R. P. Brent, Unrestricted algorithms for elementary and special functions, in *Information Processing 80* (edited by S. H. Lavington), North-Holland, Amsterdam, 1980, 613-619. CR 22#38728, MR 81i:68009. Also appeared as Report TR-CS-79-13, DCS, ANU (November 1979), 20 *pp.*
53. R. P. Brent and H. T. Kung, The chip complexity of binary arithmetic, *Proceedings of the Twelfth Annual ACM Symposium on the Theory of Computing*, ACM, New York, 1980, 190-200.
54. R. P. Brent, J. A. Hooper and J. M. Yohe, An Augment interface for Brent's multiple-precision arithmetic package, *ACM Transactions on Mathematical Software* 6 (1980), 146-149. CR 21#36520, Zbl 433.68028. A longer version appeared as Technical Summary Report #1868, Mathematics Research Center, University of Wisconsin, Madison (August 1978), 26 *pp.*
55. R. P. Brent and H. T. Kung, The area-time complexity of binary multiplication, *J. ACM* 28 (1981), 521-534. CR 22#38242, MR 82i:68027. Corrigendum: *ibid* 29 (1982), 904. MR 83j:68046. Also appeared as Report TR-CS-79-05, DCS, ANU; and as Report TR CMU-CS-79-136, DCS, CMU (July 1979), 25 *pp.*

56. R. P. Brent and H. T. Kung, On the area of binary tree layouts, *Information Processing Letters* 11 (1980), 46-48. Also appeared as Report TR-CS-79-07, DCS, ANU (July 1979), 5 *pp.*
57. R. P. Brent, The first occurrence of certain large prime gaps, *Mathematics of Computation* 35 (1980), 1435-1436. MR 81g:10002, Zbl 443.10003.
58. G. M. Baudet, R. P. Brent and H. T. Kung, Parallel execution of a sequence of tasks on an asynchronous multiprocessor, *Australian Computer J.* 12 (1980), 105-112. MR 81j:68036, Zbl 437.68016. A preliminary version appeared as a Technical Report, DCS, CMU (June 1977), 28 *pp.*
59. R. P. Brent, F. G. Gustavson and D. Y. Y. Yun, Fast solution of Toeplitz systems of equations and computation of Padé approximants, *J. Algorithms* 1 (1980), 259-295. MR 82d:65033. Also appeared as Report TR RC 8173, IBM Research (January 1980); and as Report TR-CS-79-06, DCS, ANU (June 1980), 36 *pp.*
60. R. P. Brent and H. T. Kung, A regular layout for parallel adders, *IEEE Transactions on Computers* C-31 (1982), 260-264. MR 83b:68002. Also appeared as Report TR-CS-79-04, DCS, ANU; and as Report TR CMU-CS-79-131, DCS, CMU (June 1979), 16 *pp.*
61. R. P. Brent and J. M. Pollard, Factorization of the eighth Fermat number, *Mathematics of Computation* 36 (1981), 627-630. MR 83h:10014. Also appeared as Report TR-CS-80-12, DCS, ANU, (September 1980), 7 *pp.* Preliminary announcement in *AMS Abstracts* 1 (1980), 565, 80T-A212. See [161] for a sequel.
62. R. P. Brent, *Topics in computational complexity and the analysis of algorithms*, Report TR-CS-80-14, DCS, ANU, October 1980, 375 *pp.* (D. Sc. thesis, includes [3, 12, 13, 14, 15, 16, 18, 22, 27, 28, 32, 34, 37, 39, 45, 50, 55, 60].)
63. R. P. Brent, Comments on papers by Maddison and Westreich (correspondence), *Computer J.* 24 (1981), 95-96.
64. R. P. Brent and L. M. Goldschlager, Some area-time tradeoffs for VLSI, *SIAM J. on Computing* 11 (1982), 737-747. MR 83k:68024. Preliminary version appeared as Report # 22, DCS, University of Queensland (August 1980), 18pp; and as Report TR-CS-80-15, DCS, ANU (Dec. 1980), 18 *pp.* A shorter version appeared as [72].
65. A. W. Bojanczyk, R. P. Brent and H. T. Kung, Numerically stable solution of dense systems of linear equations using mesh-connected processors, *SIAM J. Scientific and Statistical Computing* 5 (1984), 95-104. MR 85b:65026. Also appeared as Report TR-CS-81-01, DCS, ANU; and as Report TR-CS-81-119, DCS, CMU (May 1981), 23 *pp.*
66. R. P. Brent, Succinct proofs of primality for the factors of some Fermat numbers, *Mathematics of Computation* 38 (1982), 253-255. MR 82k:10002. Also appeared as Report TR-CS-81-04, DCS, ANU, January 1981, 6 *pp.*
67. R. P. Brent, New factors of Mersenne numbers (preliminary report), *AMS Abstracts* 2 (1981), 367, 81T-10-246; part II, *ibid* 3 (1982), 132, 82T-10-22; part III, *ibid* 4 (1983), 197, 83T-10-138.
68. R. P. Brent, Efficient implementation of the first-fit strategy for dynamic storage allocation, *Proceedings of the Fourth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 3 (1981), 25-34. Also appeared as Report TR-CS-81-05, DCS, ANU, February 1981, 10 *pp.* A revised version appeared as [89].

69. R. P. Brent, An idealist's view of semantics for integer and real types, *Proceedings of the Fifth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 4 (1982), 130-140. Also appeared as Report TR-CS-81-14, DCS, ANU, November 1981, 13 *pp.*
70. R. P. Brent, J. van de Lune, H. J. J. te Riele and D. T. Winter, On the zeros of the Riemann zeta function in the critical strip, II, *Mathematics of Computation* 39 (1982), 681-688. MR 83m:10067. Corrigendum *ibid* 46 (1986), 771. MR 87e:11103. Also appeared as Technical Report NW 121/82, Mathematisch Centrum, Amsterdam; and as Report TR-CS-82-01, DCS, January 1982, 13 *pp.* A longer version appeared as [81].
71. R. P. Brent and R.R. Ewin, Design of an nMOS parallel adder, *AUSMPC Design Community Newsletter* 2 (August 1982), 1-14. A longer version appeared as Report TR-CS-82-06, DCS, ANU, May 1982, 42 *pp.*
72. R. P. Brent and L. M. Goldschlager, Area-time tradeoffs for VLSI circuits, *Microelectronics '82*, Institution of Engineers, Australia, National Conference Publication # 82/4, April 1982, 52-56. See also [64].
73. R. P. Brent and H. T. Kung, Systolic VLSI arrays for polynomial GCD computation, *IEEE Transactions on Computers* C-33 (1984), 731-736. Also appeared as Report TR-CS-82-05, DCS, ANU; and as Report CMU-CS-82-118, DCS, CMU, May 1982, 16 *pp.*
74. R. P. Brent and F. T. Luk, Computing the Cholesky factorization using a systolic architecture, *Proceedings of the Sixth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 5 (1983), 295-302. Also appeared as Report TR-CS-82-08, DCS, ANU, August 1982; and as Report TR 82-521, DCS, Cornell University, September 1982, 15 *pp.*
75. R. P. Brent and F. T. Luk, *A systolic architecture for the singular value decomposition*, Report TR-CS-82-09, DCS, ANU; Report TR 82-522, DCS, Cornell University; Report CMA-R02-82, ANU, August 1982, 12 *pp.* See also [84].
76. R. P. Brent and F. T. Luk, *A systolic architecture for almost linear-time solution of the symmetric eigenvalue problem*, Report TR-CS-82-10, DCS, ANU; Report TR 82-525, DCS, Cornell University; Report CMA-R03-82, CMA, ANU, August 1982, 23 *pp.* See also [84].
77. R. P. Brent and H. T. Kung, A systolic VLSI array for integer GCD computation, in *ARITH-7, Proceedings of the Seventh Symposium on Computer Arithmetic* (edited by K. Hwang), IEEE/CS Press, 1985. Also appeared as Report TR-CS-82-11, DCS, ANU, December 1982 (revised April 1984); and as Report CMU-CS-84-135, DCS, CMU, April 1984, 33 *pp.*
78. R. P. Brent and F. T. Luk, A systolic array for the linear-time solution of Toeplitz systems of equations, *J. of VLSI and Computer Systems* 1, 1 (1983), 1-23. CR 8405-0339. Also appeared as Report TR 82-526, DCS, Cornell University, November 1982; and as Report TR-CS-83-02, DCS, ANU, January 1983, 29 *pp.*
79. R. P. Brent, H. T. Kung and F. T. Luk, Some linear-time algorithms for systolic arrays, in *Information Processing 83* (edited by R.E.A. Mason), North-Holland, Amsterdam, 1983, 865-876. Preliminary version appeared as Report TR-CS-82-15, DCS, ANU, December 1982; TR 83-541, DCS, Cornell University; Report CMA-R01-83, CMA, ANU, December 1982, 46 *pp.*

80. R. P. Brent, F. T. Luk and C. F. Van Loan, Computation of the singular value decomposition using mesh-connected processors, *J. of VLSI and Computer Systems* 1, 3 (1983-1985), 242-270. MR 86m:65033. Also appeared as Report TR 82-528, DCS, Cornell University, November 1982; and as Report TR-CS-83-05, DCS, ANU, January 1983, 34 *pp.*
81. R. P. Brent, J. van de Lune, H. J. J. te Riele and D. T. Winter, The First 200,000,001 zeros of Riemann's zeta function, in *Computational Methods in Number Theory* (edited by H. W. Lenstra, Jr. and R. Tijdeman), Mathematical Centre Tracts 154, Mathematisch Centrum, Amsterdam, 1982, 389-403. MR 84h:10003, 84d:10004.
82. R. P. Brent and H. T. Kung, Systolic VLSI arrays for linear-time GCD computation, in *VLSI 83* (edited by F. Anceau and E. J. Aas), North-Holland, Amsterdam, 1983, 145-154. Also appeared as Report TR-CS-83-08, DCS, ANU, May 1983, 11 *pp.*
83. R. P. Brent, F. T. Luk and C. F. Van Loan, Computation of the generalized singular value decomposition using mesh-connected processors, *Proceedings SPIE, Volume 431, Real Time Signal Processing VI* (edited by Keith Bromley), Society of Photo-Optical Instrumentation Engineers, Bellingham, Washington, 1983, 66-71. Also appeared as Report TR 83-563, DCS, Cornell University, July 1983; and as Report CMA-R31-83, CMA, ANU, August 1983, 12 *pp.*
84. R. P. Brent and F. T. Luk, The solution of singular-value and symmetric eigenvalue problems on multiprocessor arrays, *SIAM J. Scientific and Statistical Computing* 6 (1985), 69-84. MR 86i:65089. Also appeared as [75, 76] and as Report TR 83-562, DCS, Cornell University, July 1983, 34 *pp.* A preliminary version appeared in *Proceedings of a Workshop on Mathematical Programming and Numerical Analysis* (edited by S. Gustavson and R.S. Womersley), CMA, ANU, 1984, 38-64. MR 86k:65129.
85. R. P. Brent and L. M. Goldschlager, A parallel algorithm for context-free parsing, *Proceedings of the Seventh Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 6 (1984), 7.1-7.10. Also appeared as Report CMA-R50-83, CMA, ANU, 1983, 11 *pp.*
86. A. W. Bojanczyk and R. P. Brent, Tridiagonalization of a symmetric matrix on a square array of mesh-connected processors, *J. Parallel and Distributed Computing* 2 (1985), 261-276. Also appeared as Report CMA-R45-83, CMA, ANU, December 1983, 23 *pp.*
87. R. P. Brent and F. T. Luk, The solution of singular-value problems using systolic arrays, *Proceedings SPIE, Volume 495, Real Time Signal Processing VII*, Society of Photo-Optical Instrumentation Engineers, Bellingham, Washington, 1984, 7-12. Also appeared as Report CMA-R31-84, CMA, ANU, 1984; and as Report TR 84-626, DCS, Cornell University, August 1984, 13 *pp.*
88. A. W. Bojanczyk and R. P. Brent, Parallel solution of certain Toeplitz least squares problems, *J. Linear Algebra and its Applications* 77 (1986), 43-60. MR 88b:65160. Also appeared as Report CMA-R29-84, CMA, August 1984, 25 *pp.*
89. R. P. Brent, Efficient implementation of the first-fit strategy for dynamic storage allocation, *ACM Trans. on Programming Languages and Systems* 11, 3 (July 1989), 388-403. Also appeared as Report CMA-R33-84, August 1984, 26 *pp.* A preliminary version appeared as [68].

90. R. P. Brent, Dynamic storage allocation on a computer with virtual memory, Report CMA-R37-84, CMA, ANU, September 1984; and Report TR-CS-84-06, DCS, ANU, October 1984, 42 *pp.* A shorter version appeared as [91].
91. R. P. Brent, The most-recently-used strategy for dynamic storage allocation on a computer with virtual memory, *Proceedings of the Eighth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 7 (1985), 17.1-17.8. See also [90].
92. A. W. Bojanczyk, R. P. Brent and F. R. de Hoog, QR factorization of Toeplitz matrices, *Numerische Mathematik* 49 (1986), 81-94. MR 87k:65050. Also appeared as Report CMA-R07-85, CMA, ANU, May 1985, 23*pp.*; and as "Parallel QR factorization of Toeplitz matrices", *Proceedings SPIE, Volume 696, Advanced Algorithms and Architectures for Signal Processing*, Society of Photo-Optical Instrumentation Engineers, Bellingham, Washington, 1986.
93. A. W. Bojanczyk, R. P. Brent and F. R. de Hoog, Linearly connected arrays for Toeplitz least squares problems, *J. Parallel and Distributed Computing* 9 (1990), 261-270. Also appeared as Report CMA-R06-85, CMA, ANU, May 1985, 27 *pp.*
94. R. P. Brent and B. D. McKay, Determinants and ranks of random matrices over Z_m, *Discrete Mathematics* 66 (1987), 35-49. MR 88h:15042. Also appeared as "Determinants and ranks (mod m) of random integer matrices", Report CMA-R25-85, CMA, ANU, August 1985, 17 *pp.*
95. A. W. Bojanczyk, R. P. Brent, P. Van Dooren and F. R. de Hoog, A note on downdating the Cholesky factorization, *SIAM J. Scientific and Statistical Computing* 8 (1987), 210-221. MR 88d:65049. A modified version appeared in *Algorithms and Applications on Vector and Parallel Computers* (edited by H. J. J. te Riele, Th. J. Dekker and H. A. van der Vorst), Elsevier, Amsterdam, 1987, 307-323. MR 89i:65042, 89f:65002. Also appeared as Report CMA-R19-85, CMA, ANU, August 1985, 20 *pp.*
96. A. W. Bojanczyk and R. P. Brent, A systolic algorithm for extended GCD computation, *Comput. Math. Applic.* 14 (1987), 233-238. MR 88m:11110. An earlier version appeared in *Proceedings of the Ninth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 8 (1986), 129-137. Also appeared as Report CMA-R29-85, CMA, ANU, September 1985, 15 *pp.*
97. R. P. Brent, *Some integer factorization algorithms using elliptic curves*, Report CMA-R32-85, CMA, ANU, September 1985, 20 *pp.* A revision appeared as [102].
98. R. P. Brent, A linear algorithm for data compression, *Australian Computer Journal* 19, 2 (May 1987), 64-68. Also appeared as Report TR-CS-86-10, DCS, ANU, November 1986, 9 *pp.* Abstract appeared in *Proceedings of the Tenth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 9 (1987), 273.
99. B. B. Zhou and R. P. Brent, An efficient architecture for solving the recursive convolution equation with high throughput, *Proceedings of the First IASTED International Symposium on Signal Processing and its Applications* (edited by B. Boashash), Institution of Engineers, Australia, Vol. 2, 1987, 771-775. ISBN 0-8581-4143-4.

100. R. P. Brent and G. L. Cohen, A new lower bound for odd perfect numbers, *Mathematics of Computation* 53, 187 (July 1989), 431-437. Supplement, *ibid*, S7-24. MR 89m:11008. Also appeared as Report TR-CS-88-05, CSL, ANU, February 1988, 50 *pp.* For a sequel see [116].
101. R. P. Brent and B. D. McKay, On determinants of random symmetric matrices over Z_m, *Ars Combinatoria* 26A (1988), 57-64. MR 90g:05015, 89j:05001. Also appeared as Report TR-CS-88-03, CSL, ANU, February 1988, 8 *pp.*
102. R. P. Brent, Some integer factorization algorithms using elliptic curves, *Proceedings of the Ninth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 8 (1986), 149-163.
103. B. B. Zhou and R. P. Brent, A high throughput systolic implementation of the second order recursive filter, *Proceedings IEEE 1988 Conference on Acoustics, Speech and Signal Processing* (New York, April 1988). Also appeared as Report TR-CS-88-04, CSL, ANU, February 1988, 14 *pp.*
104. B. B. Zhou and R. P. Brent, *A two-level pipelined implementation of direct-form recursive filters*, Report TR-CS-88-06, CSL, ANU, April 1988, 16 *pp.* A revision appeared as [105].
105. R. P. Brent and B. B. Zhou, A stabilized parallel algorithm for direct-form recursive filters, *IEEE Transactions on Computers* C-40, 3 (March 1991), 333-336. Also appeared as *A stabilized parallel implementation of direct-form recursive filters*, Report TR-CS-88-07, CSL, ANU, May 1988, 9 *pp.*
106. R. P. Brent, G. L. Cohen and H. J. J. te Riele, *An improved lower bound technique for odd perfect numbers*, Report TR-CS-88-08, CSL, ANU, August 1988, 71 *pp.* A revised version appeared as [116].
107. T. Bossomaier and R. P. Brent, Matrix diagonalisation by transputers, *Proc. First Australian Transputer and Occam Conference* (Melbourne, June 1988), 11-16.
108. R. P. Brent, Old and new algorithms for Toeplitz systems, *Proceedings SPIE, Volume 975, Advanced Algorithms and Architectures for Signal Processing III* (edited by Franklin T. Luk), Society of Photo-Optical Instrumentation Engineers, Bellingham, Washington, 1989, 2-9. ISBN 0-8194-0010-6. Also appeared as Report TR-CS-88-10, ANU, July 1988, 8 *pp.*
109. C. J. Anfinson, R. P. Brent and F. T. Luk, A theoretical foundation for the weighted checksum scheme, *Proceedings SPIE, Volume 975, Advanced Algorithms and Architectures for Signal Processing III* (edited by Franklin T. Luk), Society of Photo-Optical Instrumentation Engineers, Bellingham, Washington, 1989, 10-18. ISBN 0-8194-0010-6.
110. R. P. Brent, Parallel algorithms for digital signal processing, *Numerical Linear Algebra, Digital Signal Processing and Parallel Algorithms* (edited by G. H. Golub and P. Van Dooren), Springer-Verlag, 1991, 93-110. ISBN 3-540-52300-6. Also appeared as Report TR-CS-89-15, DCS, ANU, June 1989, 12 *pp.*
111. R. P. Brent, Parallel algorithms for Toeplitz systems, *Numerical Linear Algebra, Digital Signal Processing and Parallel Algorithms* (edited by G. H. Golub and P. Van Dooren), Springer-Verlag, 1991, 75-92. ISBN 3-540-52300-6. A preliminary version appeared as [108].
112. R. P. Brent, F. T. Luk and C. J. Anfinson, Checksum schemes for fault tolerant systolic computing, *Mathematics in Signal Processing II* (edited by J. G. McWhirter), Clarendon Press, Oxford, 1990, 791-804. ISBN 0-19-853641-0.

113. R. P. Brent, Factorization of the eleventh Fermat number (preliminary report), *AMS Abstracts* 10 (1989), 89T-11-73. See also [161].
114. R. P. Brent, F. T. Luk and C. J. Anfinson, Choosing small weights for multiple error detection, *Proceedings SPIE, Volume 1058, High Speed Computing II*, Society of Photo-Optical Instrumentation Engineers, Los Angeles, 1989, 130-136.
115. R. P. Brent, Parallel algorithms for integer factorisation, *Number Theory and Cryptography* (edited by J. H. Loxton), London Mathematical Society Lecture Note Series 154, Cambridge University Press, 1990, 26-37. ISBN 0-521-39877-0. MR 91h:11148, 90m:11003. Also appeared as Report TR-CS-89-22, CSL, ANU, and as Report CMA-R49-89, CMA, ANU, October 1989, 12 *pp.*
116. R. P. Brent, G. L. Cohen and H. J. J. te Riele, Improved techniques for lower bounds for odd perfect numbers, *Mathematics of Computation* 57 (1991), 857-868. MR 92c:11004. Also appeared as Report NM-R8921, Centrum voor Wiskunde en Informatica, Amsterdam, October 1989, 13 *pp.* A longer version was submitted to the *Mathematics of Computation* UMT file and appeared as Report CMA-R50-89, CMA, ANU, October 1989, 198 *pp.*
117. R. P. Brent, *Factor: an integer factorization program for the IBM PC*, Report TR-CS-89-23, October 1989, and Report CMA-R62-89, November 1989, 7 *pp.*
118. R. P. Brent, Factorising, *Australian Math. Soc. Gazette* 16, 5 (October 1989), 154-155.
119. R. P. Brent, Fast training algorithms for multi-layer neural nets, *IEEE Transactions on Neural Networks* 2, 3 (May 1991), 346-354. Preliminary version appeared as Report TR-CS-90-01, CSL, ANU, January 1990, 13 *pp*; and as Technical Report NA-90-03, Department of Computer Science, Stanford University (1990 Forsythe Lecture #2), 16 *pp.* Extended abstract in *Proceedings of the First Australian Conference on Neural Networks* (edited by M. Jabri), Electrical Engineering, University of Sydney, January 1990, 97-98.
120. R. P. Brent, Primality testing and integer factorisation, in *The Role of Mathematics in Science* (Proceedings of a Symposium held at the Australian Academy of Science, Canberra, 20 April 1990), Australian Academy of Science, 1991, 14-26. ISBN 0-85847-170-1. Also appeared as Report TR-CS-90-03, CSL, ANU, May 1990, 15 *pp.*
121. P. E. Strazdins and R. P. Brent, Implementing BLAS level 3 on the CAP-II, in [123], 121-129.
122. R. P. Brent, Vector and parallel algorithms for integer factorisation, *Proceedings Third Australian Supercomputer Conference* (Melbourne, December 1990), Strategic Research Foundation, University of Melbourne, December 1990, 12 *pp.* Also appeared as Report TR-CS-90-05, CSL, ANU, October 1990, 13 *pp.*
123. R. P. Brent and M. Ishii (editors), *Proceedings of the First Fujitsu-ANU CAP Workshop*, Fujitsu Research Laboratories, Kawasaki, Japan, November 1990, 205 *pp.*
124. D. L. Boley, R. P. Brent, G. H. Golub and F. T. Luk, Algorithmic fault tolerance using the Lanczos method, *SIAM J. Matrix Analysis and Applications* 13 (1992), 312-332. MR 93f:65034. Also appeared as Report TR-CS-91-03, CSL, ANU, February 1991; and as Report UMSI 91/94, University of Minnesota Supercomputer Institute, March 1991, 19 *pp.*

125. R. P. Brent, Parallel computers and parallel algorithms (abstract of 1990 Forsythe Lecture #1, also invited paper presented at Fourteenth Australian Computer Science Conference), *Australian Computer Science Communications* 13, 1 (1991), 1.
126. A. W. Bojanczyk, R. P. Brent and F. R. de Hoog, Stability analysis of fast Toeplitz linear system solvers, Report CMA-MR17-91, CMA, ANU, August 1991, 23 *pp.* For a revision see [144].
127. R. P. Brent, Computing Aurifeuillian factors, in *Computational Algebra and Number Theory* (edited by W. Bosma and A. van der Poorten), Mathematics and its Applications, vol. 325, Kluwer Academic Publishers, Boston, 1995, 201-212. MR 96m:11111, 96c:00019. ISBN 0-7923-3501-5.
128. R. P. Brent, Parallel algorithms in linear algebra, *Algorithms and Architectures: Proceedings of the Second NEC Research Symposium* held at Tsukuba, Japan, August 1991 (edited by T. Ishiguro), SIAM, Philadelphia, 1993, 54-72. ISBN 0-89871-312-9. Also Report TR-CS-91-06, CSL, ANU, August 1991, 17 *pp.*
129. R. P. Brent(editor), *Proceedings of the Second Fujitsu-ANU CAP Workshop*, ANU, November 1991, 254 *pp.*
130. R. P. Brent, The LINPACK benchmark on the AP 1000, *Proceedings of Frontiers '92* (McLean, Virginia, October 1992), IEEE Press, 1992, 128-135. ISBN 0-8186-2772-7. Also "The LINPACK benchmark on the AP 1000: Preliminary report", in [129], G1-G13.
131. P. E. Strazdins and R. P. Brent, The implementation of BLAS level 3 on the AP 1000: Preliminary report, in [129], H1-H17.
132. R. P. Brent, Uniform random number generators for supercomputers, Proc. Fifth Australian Supercomputer Conference, Melbourne, December 1992, 95-104. ISBN 0-86444-270-X. A preliminary version appeared as *Uniform random number generators for vector and parallel computers*, Report TR-CS-92-02, CSL, ANU, March 1992, 16 *pp.* Also Area 4 Working Note #1.
133. R. P. Brent, On the periods of generalized Fibonacci recurrences, *Mathematics of Computation* 63 (1994), 389-401. MR 94i:11012. Also appeared as Report TR-CS-92-03, CSL, ANU, March 1992; Report CMA-MR8-92/SMS-31-92, Centre for Mathematics and its Applications, April 1992, 11 *pp.* Also Area 4 Working Note #2.
134. R. P. Brent and H. J. J. te Riele, Factorizations of $a^n \pm 1$, $13 \le a < 100$, Report NM-R9212, Centrum voor Wiskunde en Informatica, Amsterdam, June 1992, v+363 *pp.* ISSN 0169-0388. Also R. P. Brent, H. J. J. te Riele and P. L. Montgomery, Update 1 to: Factorizations of $a^n \pm 1$, $13 \le a < 100$, Report NM-R9419, CWI, Amsterdam, September 1994, iv+42 *pp.* Also (by the same authors) Factorizations of $a^n \pm 1$, $13 \le a < 100$: Update 2, Report NM-R9609, CWI, Amsterdam, March 1996, viii+42 *pp.*
135. R. P. Brent, On computing factors of cyclotomic polynomials, *Mathematics of Computation* 61 (1993), 131-149 (D. H. Lehmer memorial issue). MR 93m:11131. Also appeared as Reports TR-CS-92-13, CSL, CMA-MR29-92 and SMS-89-92, CMA, ANU, Sept. 1992, 20 *pp.* For an introductory account, see [127].

136. R. P. Brent and P. E. Strazdins, Implementation of the BLAS level 3 and Linpack benchmark on the AP 1000, *Fujitsu Scientific and Technical Journal* 29, 1 (March 1993), 61-70. Also appeared as Report TR-CS-92-14, CSL, ANU, October 1992, 16 *pp.* Summary in R. P. Brent, A. Czezowski, P. Price, P. E. Strazdins and B. B. Zhou, *Linear Algebra on the AP1000* (poster), First Fujitsu PCRF User Group Meeting, Kawasaki, Japan, Nov. 1992.
137. B. B. Zhou and R. P. Brent, Parallel implementation of eigenvalue algorithms on distributed memory machines, *Proceedings of the 16th Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 15 (1993), 19-25. ISSN 0157-3055
138. B. B. Zhou and R. P. Brent, Parallel implementation of singular value decomposition on tree architectures, *Proceedings of the 22nd International Conference on Parallel Processing* (St. Charles, Illinois, August 1993), Vol. 3, CRC Press, Ann Arbor, 1993, 128-131. A longer version appeared as Report TR-CS-93-05, CSL, ANU, January 1993 (revised May 1993), 14 pp.
139. R. P. Brent, An asymptotic expansion inspired by Ramanujan, *Australian Mathematical Society Gazette*, 20 (1993), 149-155. MR 95b:33006. Also available as Technical Report CMA-MR02-93/SMS-10-93, CMA, ANU, February 1993, 7 pp. Revision appeared as "Ramanujan and Euler's constant", *Proceedings of Symposia in Applied Mathematics*, Vol. 48 (edited by W. Gautschi), American Mathematical Society, Providence, Rhode Island, 1994, 541-545. MR 95k:01022, MR 95j:00014. ISBN 0-8218-0291-7. ISSN 0160-7634.
140. R. P. Brent and A. Tridgell, A fast, storage-efficient parallel sorting algorithm, *Proceedings of the International Conference on Application-Specific Array Processors* held at Venice, Italy, Oct. 1993 (edited by L. Dadda and B. Wah), IEEE Computer Society Press, Los Alamitos, California, 1993, 369–379. ISBN 0-8186-3492-8. Also *Sorting on the AP1000* (poster), First Fujitsu PCRF User Group Meeting, Kawasaki, Japan, Nov. 1992. Implementation details appeared in A. Tridgell and R. P. Brent, *An implementation of a general-purpose parallel sorting algorithm*, Technical Report TR-CS-93-01, CSL, ANU, February 1993, 24 pp. See also [158].
141. R. P. Brent *Fast normal random number generators on vector processors,* Technical Report TR-CS-93-04, CSL, ANU, March 1993, 6 *pp.* Also Area 4 Working Note #4.
142. B. B. Zhou, R. P. Brent and A. Tridgell, Efficient implementation of sorting algorithms on asynchronous distributed-memory machines, *Proceedings of the 1994 International Conference on Parallel and Distributed Systems* (Hsinchu, Taiwan, December 1994), IEEE Computer Society Press, Los Alamitos, California, 1994, 102-106. ISBN 0-8186-6555-6. Also Technical Report TR-CS-93-06, CSL, ANU, May 1993, 7 pp.
143. A. W. Bojanczyk, R. P. Brent and F. R. de Hoog, Stability analysis of a general Toeplitz system solver, *Numerical Algorithms* 10 (1995), 225-244. MR 97e:65031. Based on *Parallel algorithms and numerical stability for Toeplitz systems* (invited paper presented by R. P. Brent at SIAM Conference on Linear Algebra in Signals, Systems and Control, Seattle, August 16-19, 1993). Preliminary version *A weakly stable algorithm for general Toeplitz systems*, Technical Report, TR-CS-93-15, CSL, ANU, August 1993 (revised June 1994).

144. A. W. Bojanczyk, R. P. Brent, F. R. de Hoog and D. R. Sweet, On the stability of the Bareiss and related Toeplitz factorization algorithms, *SIAM J. Matrix Analysis and Applications* 16 (1995), 40-57. MR 95k:65030. Also Technical Report TR-CS-93-14, CSL, ANU, November 1993, 18 pp.
145. B. B. Zhou and R. P. Brent, Parallel implementation of QRD algorithms on the Fujitsu AP1000, *Proceedings of the 17th Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 16 (1994), 733-743. Also Technical Report TR-CS-93-12, CSL, ANU, Nov. 1993, 11 pp.
146. R. P. Brent, A. Czezowski, M. Hegland, P. E. Strazdins and B. B. Zhou, Linear algebra research on the AP1000, *Proceedings of the Second Parallel Computing Workshop*, Fujitsu Laboratories, Kawasaki, Japan, Nov. 1993, P1-L1–13.
147. R. P. Brent, *Uses of randomness in computation*, Technical Report TR-CS-94-06, CSL, ANU, June 1994, 14 pp. (invited talk presented at Theory Day, University of NSW, April 1994).
148. R. P. Brent, A. J. Cleary, M. Hegland, J. H. Jenkinson, Z. Leyk, M. Nakanishi, M. R. Osborne, P. J. Price, S. Roberts and D. B. Singleton, Implementation and performance of scalable scientific library subroutines on Fujitsu's VPP500 parallel-vector supercomputer, *Proceedings of the Scalable High Performance Computing Conference*, (Knoxville, Tennessee, 23-25 May, 1994), IEEE Computer Society Press, Los Alamitos, California, 1994, 526–533. ISBN 0-8186-5680-8. Also Area 4 Working Note #16, May 1994, 9 *pp.*
149. Hong Tang, B. B. Zhou, I. D. G. Macleod, R. P. Brent and Wei Sun, Parallel implementation of an adaptive differential iterative RMS filter for efficient signal restoration, *Proc. IEEE Region 10 Ninth Annual International Conference on Parallel Computation and Applications*, Singapore, August, 1994, Vol. 2, 672-676.
150. R. P. Brent, Integer Factorization, in *Grand Challenges in Supercomputing at the Australian National University* (edited by T. Bossomaier, D. Singleton and M. Kahn), CSL, ANU, April 1994, 34-39.
151. Hong Tang, B. B. Zhou, I. D. G. Macleod and R. P. Brent, A class of parallel iterative median-type algorithms for efficient image processing, *Proceedings of the International Conference on Systems, Control and Information – Methodologies and Applications (ICSCI),* Wuhan, China, October 1994, 21-28; also *Journal of Northern Jiaotong University,* Beijing, China, 1994.
152. Hong Tang, B. B. Zhou, I. D. G. Macleod, R. P. Brent and Wei Sun, Comparisons of parallel iterative noise filters for real-time image processing, *Proc. Fifth International Conference on Signal Processing Applications and Technology* (ICSPAT'94), Dallas, Texas, October 1994, Vol. 2, 1015-1020.
153. B. B. Zhou and R. P. Brent, A parallel ring ordering algorithm for efficient one-sided Jacobi SVD computations, *J. Parallel and Distributed Computing* 42 (1997), 1-10. Preliminary version in *Proceedings of the Sixth IASTED/ ISMM International Conference on Parallel and Distributed Computing and Systems*, Washington, D.C., October 1994, 369-372.
154. B. B. Zhou and R. P. Brent, On parallel implementation of the one-sided Jacobi algorithm for singular value decompositions, *Proceedings Euromicro Workshop on Parallel and Distributed Processing* (San Remo, Italy, January 25-27, 1995), IEEE Computer Society Press, Los Alamitos, California, 1995, 401-408.

155. B. B. Zhou, R. P. Brent and M. H. Kahn, Efficient one-sided Jacobi algorithms for singular value decomposition and the symmetric eigenproblem, *Proc. IEEE First International Conference on Algorithms and Architectures for Parallel Processing* (ICA3PP), IEEE Press, 1995, 256-262. ISBN 0-7803-2018-2. Preliminary version appeared as "A one-sided Jacobi algorithm for the symmetric eigenvalue problem", *Proceedings of the Third Parallel Computing Workshop*, Kawasaki, Japan, November 1994, P1-Q-1–P1-Q-7.
156. C. Eldershaw and R. P. Brent, Factorization of large integers on some vector and parallel computers, *Proceedings of Neural, Parallel and Scientific Computations* 1 (1995), 143-148. ISBN 0-96-403989-3. Also Technical Report TR-CS-95-01, CSL, ANU, January 1995, 6 pp. A revision, "Integer factorisation on the AP1000", appeared in *PCW '95: Proceedings of the Fourth International Parallel Computing Workshop 1995*, Imperial College, London, 1995, 233-242.
157. D. R. Sweet and R. P. Brent, Error analysis of a fast partial pivoting method for structured matrices, *Proceedings SPIE, Volume 2363, Advanced Signal Processing Algorithms*, (edited by F. Luk), Society of Photo-Optical Instrumentation Engineers, Bellingham, Washington, 1995, 266-280. Also Technical Report TR-CS-95-03, CSL, ANU, June 1995, 18 pp.
158. A. Tridgell and R. P. Brent, A general-purpose parallel sorting algorithm, *International J. of High Speed Computing* 7 (1995), 285-301. For a preliminary version see [140]. For an extension to external sorting see A. Tridgell, R. P. Brent and B. D. McKay, *Parallel Integer Sorting*, Internal Report, DCS, ANU, December 1995 (published as Technical Report TR-CS-97-10, CSL, ANU, May 1997), 32 pp.
159. B. B. Zhou and R. P. Brent, Jacobi-like algorithms for eigenvalue decomposition of a real normal matrix using real arithmetic, *Proceedings of the Nineteenth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 18, 1, (1996), 367-375. ISSN 0157-3055
160. W. Ma, C. W. Johnson and R. P. Brent, Concurrent programming in T-Cham, *Proceedings of the Nineteenth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 18, 1, (1996), 291-300. ISSN 0157-3055
161. R. P. Brent, Factorization of the tenth Fermat number, *Mathematics of Computation*, 68, 225 (Jan. 1999), 429-451. Preliminary version available as *Factorization of the tenth and eleventh Fermat numbers,* Technical Report TR-CS-96-02, CSL, ANU, Feb. 1996, 25 *pp.*
162. W. Liang and R. P. Brent, Constructing the spanners of graphs in parallel, *Proceedings of the Tenth International Parallel Processing Symposium* (IPPS '96), IEEE/CS Press, 1996, 206-210. ISBN 0-8186-7255-2 Longer version appeared as Technical Report TR-CS-96-01, CSL, ANU, Feb. 1996, 16 *pp.*
163. B. B. Zhou and R. P. Brent, Jacobi-like algorithms for eigenvalue decomposition of a real normal matrix using real arithmetic, *Proceedings of the Tenth International Parallel Processing Symposium* (IPPS '96), IEEE/CS Press, 1996, 593-600. ISBN 0-8186-7255-2. For a preliminary version see [159].
164. W. Ma, C. W. Johnson and R. P. Brent, Programming with transactions and the Chemical Abstract Machine, *Proceedings of the 1996 International Symposium on Parallel Architectures, Algorithms, and Networks* (I-SPAN '96), IEEE Computer Society Press, Los Alamitos, California, 1996, 562-564. ISBN 0-8186-7460-1

165. J. Yang, W. Ma and R. P. Brent, From hypertext to flat text: a tool for document construction, *Proceedings of the Second Australian World Wide Web Conference* (AusWeb '96), Southern Cross University Press, 1996, 67-72. ISBN 1-875855-16-5. Also `http://www.scu.edu.au/ausweb96/tech/wanli` .
166. R. P. Brent, A. J. van der Poorten and H. J. J. te Riele, A comparative study of algorithms for computing continued fractions of algebraic numbers (extended abstract), in *Algorithmic Number Theory* (Henri Cohen, editor), *Lecture Notes in Computer Science*, Vol. 1122, Springer-Verlag, Berlin, 1996, 35-47. ISBN 3-540-61581-4
167. B. B. Zhou, R. P. Brent and X. Qu, The design of a supporting environment for online parallel debugging, *Proceedings of the Sixth Parallel Computing Workshop*, Kawasaki, Japan, November 1996, P1-S-1 – P1-S-8.
168. B. B. Zhou, R. P. Brent, X. Qu and W. Liang, A novel parallel algorithm for enumerating combinations, *Proceedings of the 25th International Conference on Parallel Processing*, Bloomingdale, Illinois, August 1996. IEEE Press, Vol. 2, 70-73.
169. B. B. Zhou, R. P. Brent and X. Qu, An efficient scheduling algorithm for multiprogramming on parallel computing systems, *Proceedings of the Twentieth Australian Computer Science Conference*, special issue of *Australian Computer Science Communications* 19, 1 (1997), 336-345.
170. R. P. Brent, *A fast vectorised implementation of Wallace's normal random number generator,* Technical Report TR-CS-97-07, CSL, ANU, April 1997, 9 *pp.* Also Area 4 Working Note # 21.
171. M. Manzur Murshed and R. P. Brent, *RMSIM: a serial simulator for reconfigurable mesh parallel computers*, Technical Report TR-CS-97-06, CSL, ANU, April, 1997, 10 *pp.*
172. X. Qu, J. X. Yu and R. P. Brent, A mobile TCP socket, *Proc. IASTED International Conference on Software Engineering* (San Francisco, Nov. 1997). Also appeared as Technical Report TR-CS-97-08, CSL, ANU, April 1997, 24 *pp.*
173. R. P. Brent, Numerical stability of some fast algorithms for structured matrices, *Proceedings of the of the Sixth Workshop on Scientific Computing* (Hong Kong, 10-12 March 1997), Springer-Verlag, 1998, 41-48. ISBN 981-3083-60-3
174. M. Manzur Murshed and R. P. Brent, Constant time algorithms for computing the contour of maximal elements on the reconfigurable mesh, *Parallel Processing Letters* 8 (1998), 351-361. Also appeared as Technical Report TR-CS-97-09, CSL, ANU, May 1997, 9 *pp.* Shorter version in *Proc. 1997 International Conference on Parallel and Distributed Systems* (ICPADS'97, Seoul, Korea, Dec. 1997), IEEE Computer Society Press, Los Alamitos, California, 1997, 172-177. ISBN 0-8186-8227-2
175. R. P. Brent, R. E. Crandall, K. Dilcher and C. Van Halewyn, Three new factors of Fermat numbers, *Mathematics of Computation* 69 (2000), 1297-1304. For a preliminary version see R. P. Brent, R. E. Crandall and K. Dilcher, *Two new factors of Fermat numbers,* Technical Report TR-CS-97-11, CSL, ANU, May 1997, 7 *pp.*

176. M. Manzur Murshed and R. P. Brent, Algorithms for optimal self-simulation of some restricted reconfigurable meshes, *Proc. Second International Conference on Computational Intelligence and Multimedia Applications* (ICCIMA'98, Monash Univ., Feb. 1998), World Scientific, Singapore, 1998, 734-744. ISBN 981-02-3352-3. Longer version appeared as Technical Report TR-CS-97-16, CSL, ANU, July 1997, 12 *pp.*
177. R. P. Brent, Stability of fast algorithms for structured linear systems, in *Fast Reliable Algorithms for Matrices with Structure* (editors, Ali H. Sayed and Thomas Kailath), SIAM, Philadelphia, 1999, 103-116. ISBN 0-89871-431-1 Preliminary version available as Technical Report TR-CS-97-18, CSL, ANU, September 1997, 13 *pp.*
178. B. A. Murphy and R. P. Brent, On quadratic polynomials for the number field sieve, *Proc. Fourth Australasian Theory Symposium* (CATS'98, Perth, Feb. 1998), special issue of *Australian Computer Science Communications* 20, 3 (1998), 199-215. ISBN 981-3083-92-1 Longer version available as Technical Report TR-CS-97-17, CSL, ANU, August 1997, 18 *pp.*
179. X. Qu, J. X. Yu and R. P. Brent, Implementation of a portable-IP system for mobile TCP/IP, *Proc. 21st Australasian Computer Science Conference* (ACSC'98, Perth, Feb. 1998), special issue of *Australian Computer Science Communications* 20, 1 (1998), 499-510. ISBN 981-3083-90-5 Also appeared as Technical Report TR-CS-97-19, CSL, ANU, November 1997, 11 *pp.*
180. B. B. Zhou, X. Qu and R. P. Brent, Effective scheduling in a mixed parallel and sequential computing environment, *Proc. 6th Euromicro Workshop on Parallel and Distributed Computing*, Madrid, Jan. 1998, 73-84.
181. B. B. Zhou, R. P. Brent, D. Walsh and K. Suzaki, Job scheduling strategies for networks of workstations, *Proc Fourth Workshop on Job Scheduling Strategies for Parallel Processing* (Orlando, Florida, 30 March 1998), *Lecture Notes in Computer Science*, Vol. 1459, Springer-Verlag, 1998, 143-157.
182. R. P. Brent, L. Grosz, D. L. Harrar II, M. Hegland, M. H. Kahn, G. Keating, G. J. Mercer, M. Nakanishi, O. Nielsen, M. R. Osborne, and B. B. Zhou, Development of a mathematical subroutine library for Fujitsu vector parallel processors, *Proc. ACM International Conference on Supercomputing* (ICS'98), Melbourne, July 1998, 13-20.
183. R. P. Brent, Twenty years' analysis of the binary Euclidean algorithm, *Proc. Symposium in Celebration of the Work of C. A. R. Hoare*, Oxford, Sept. 1999, to appear. Extended version available as *Further analysis of the Binary Euclidean algorithm*, Report PRG-TR-7-99, Oxford University Computing Laboratory, November 1999, 18 pp.
184. M. Manzur Murshed and R. P. Brent, Serial simulation of reconfigurable mesh, an image understanding architecture, in *Advances in Computer Cybernetics (Volume V), Proc. International Symposium on Audio, Video, Image Processing and Intelligent Applications (ISAVIIA'98)*, Baden-Baden, Germany, 1998, 92-97.
185. R. P. Brent, Random number generation and simulation on vector and parallel computers (extended abstract), *Proc. Fourth International Euro-Par Conference* (Southampton, UK, 1-4 Sept 1998), D. Pritchard and J. Reeve (editors), *Lecture Notes in Computer Science*, Vol. 1470, Springer-Verlag, Berlin, 1998, 1-20. ISBN 3-540-64952-2, ISSN 0302-9743

186. M. Manzur Murshed and R. P. Brent, Adaptive AT^2 optimal algorithms on reconfigurable meshes, *Proc. Tenth IASTED Internat. Conf. on Parallel and Distributed Computing and Systems*, Las Vegas, Nevada, Oct. 1998, 190-195. Longer version available as Technical Report TR-CS-98-02, CSL, ANU, March 1998, 15 *pp.* Revision accepted for publication in *J. Parallel Computing*
187. R. P. Brent, L. Grosz, D. L. Harrar II, M. Hegland, M. H. Kahn, G. Keating, G. J. Mercer, M. Nakanishi, M. R. Osborne, and B. B. Zhou, Design of the scientific subroutine library for the Fujitsu VPP300, *Proc. Third High Performance Computing Asia Conference and Exhibition*, Singapore, Sept. 1998, 424-438.
188. R. P. Brent, Computer arithmetic – a programmer's perspective (invited talk), abstract in *Proc. 14th IEEE Symposium on Computer Arithmetic* (I. Koren and P. Kornerup, eds.), IEEE Computer Society, Los Alamitos, California, 1999, 2. ISBN 0-7695-0116-8, 0-7695-0118-4 (microfiche)
189. B. B. Zhou, R. P. Brent, C. W. Johnson and D. Walsh, Job re-packing for enhancing the performance of gang scheduling, *Proc. 5th Workshop on Job Scheduling Strategies for Parallel Processing*, San Juan, Puerto Rico, April 1999, 81-92.
190. M. Manzur Murshed and R. P. Brent, Maximal contour algorithms on constrained reconfigurable meshes, *Proc. 1999 International Conference on Parallel and Distributed Processing Techniques and Applications* (PDPTA'99, Las Vegas, Nevada, 28 June – 1 July, 1999), CSREA Press, Vol. 4, 1999, 2238-2244. ISBN 1-892512-12-2, 1-892512-15-7.
191. M. Manzur Murshed and R. P. Brent, A new adaptive sorting algorithm on the reconfigurable mesh, an image understanding architecture, in *Advances in Intelligent Computation and Multimedia Systems* (edited by S. Rahman, O. Baiocchi and G. Lasker), IIASSRC, 1999, 183-188. ISBN 0-921836-80-5
192. B. B. Zhou and R. P. Brent, A block Jacobi-like algorithm for eigenvalue decomposition of a real normal matrix using real arithmetic, *SIAM J. Matrix Analysis and Applications*, to appear. For preliminary versions see [159, 163].
193. R. P. Brent, Some parallel algorithms for integer factorisation, *Proc. Fifth International Euro-Par Conference* (Toulouse, France, 1-3 Sept 1999), edited by P. Amestoy *et al*, *Lecture Notes in Computer Science*, Vol. 1685, Springer-Verlag, Berlin, 1–22. ISBN 3-540-66443-2, ISSN 0302-9743
194. B. B. Zhou, P. Mackerras, C. W. Johnson, D. Walsh and R. P. Brent, An efficient resource allocation scheme for gang scheduling, *Proc. IEEE International Workshop on Cluster Computing* (Melbourne, 2–3 December 1999).
195. M. Manzur Murshed and R. P. Brent, How promising is the k-constrained reconfigurable mesh, *Proc. 15th ISCA Int. Conf. on Computers and their Applications* (New Orleans, 29-31 March 2000).
196. R. P. Brent, Recent progress and prospects for integer factorisation algorithms, *Proc. Sixth Annual Internat. Computing and Combinatorics Conference* (Sydney, July 26-28, 2000), to appear. Preliminary version available as Report PRG-TR-03-00, Oxford University Computing Laboratory, 26 April 2000, 17 pp.
197. R. P. Brent, *Public key cryptography with a group of unknown order*, Report PRG-TR-02-00, Oxford University Computing Laboratory, 5 June 2000, 11 pp.

Last revised June 2000