

SELECTED PUBLICATIONS

Victor Y. Pan

Department of Mathematics and Computer Science
Lehman College and the Graduate Center
City University of New York
Bronx, New York 10468

Tel. (914) 737-2637 (home) and (718) 960-8568 (office)

Fax (718) 960-8969

E-Mail: victor.pan @ lehman.cuny.edu

Website: <http://comet.lehman.cuny.edu/vpan/>

1 BOOKS

1. “How to Multiply Matrices Faster”, Lecture Notes in Computer Science, vol. 179 (XI + 212 pages), Springer, Berlin (1984).
2. “Polynomial and Matrix Computations”, Volume 1: “Fundamental Algorithms” (XVI + 415 pages) (by D. Bini and V. Y. Pan), in the series Progress in Theoretical Computer Science (R.V. Book editor), Birkhäuser, Boston (1994).
3. “Structured Matrices and Polynomials: Unified Superfast Algorithms” (XXV + 278 pages), Birkhäuser/Springer, Boston/New York (June 2001).
4. “Numerical Methods for Roots of Polynomials” (by J. M. McNamee and V. Y. Pan), Part 2 (XXII + 718 pages), Elsevier (2013).

2 CHAPTERS IN BOOKS AND SURVEY ARTICLES (12 SELECTED OUT OF 24). *Items 1, 2, 3-5, 8, and 9 in- cluded new research results.*

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2. “How Can We Speed Up Matrix Multiplication?”, SIAM Review, 26, 3, 393–415 (1984).
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5. “Solving a Polynomial Equation: Some History and Recent Progress”, SIAM Review, 39, 2, 187–220 (1997).
6. “Solving Polynomials with Computers”, American Scientist, 86, 62–69 (January-February 1998).

7. "Some Recent Algebraic/Numerical Algorithms", Electronic Proceedings of IMACS/ACA'98 (1998): <http://www-troja.fjfi.cvut.cz/aca98/sessions/approximate>
8. "Newton's Iteration for Structured Matrices and Linear Systems of Equations" (by V. Y. Pan, S. Branham, R. Rosholt, and A. Zheng), SIAM volume on Fast Reliable Algorithms for Matrices with Structure (T. Kailath and A. H. Sayed, editors), chapter 7, pages 189–210, SIAM Publications, Philadelphia (1999).
9. "Root-finding with Eigen-solving" (by V. Y. Pan, D. Ivolgin, B. Murphy, R. E. Rosholt, Y. Tang, X. Wang, and X. Yan), pages 185–210 in Symbolic-Numeric Computation (Dongming Wang and Lihong Zhi, editors), Birkhäuser, Basel/Boston (2007).
10. "Fast Fourier Transform and Its Applications" (by I. Z. Emiris and V. Y. Pan, in Algorithms and Theory of Computations Handbook", Second Edition, Volume 1 (1016 pages): General Concepts and Techniques, pages 1–31 in Chapter 18 (Mikhail J. Atallah and Marina Blanton, editors), CRC Press Inc., Boca Raton, Florida (2009).
11. "Algebraic Algorithms" (by I. Z. Emiris, V. Y. Pan, and E. Tsigaridas), Chapter 10 (pages from 10–1 to 10–40) of Computing Handbook (Third edition), Volume I: Computer Science and Software Engineering (Allen B. Tucker, Teo Gonzales, and Jorge L. Diaz-Herrera, editors), Taylor and Francis Group (2014).
12. "Fast Matrix Multiplication and Its Algebraic Neighborhood", SB MATH (Mathematical Sbornik), 208, 11 (2017) DOI:10.1070/SM8833 (available in Russian and in English).

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9. "Fast and Efficient Parallel Solution of Sparse Linear Systems" (by V. Y. Pan and J. Reif), SIAM J. on Computing, 22, 6, 1227–1250 (1993). Proceedings version in STOC 1985.

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13. "Approximating Complex Polynomial Zeros: Modified Quadtree (Weyl's) Construction and Improved Newton's Iteration", *J. of Complexity*, 16, 1, 213–264 (2000).
14. "Multivariate Polynomials, Duality and Structured Matrices" (by B. Mourrain and V. Y. Pan), *J. of Complexity*, 16, 1, 110–180 (2000).
15. "Univariate Polynomials: Nearly Optimal Algorithms for Numerical Factorization and Root-Finding", *J. of Symbolic Computation*, 33, 5, 701–733 (2002). Proceedings version in *ISSAC* 2001.
16. "Inversion of Displacement Operators" (by V. Y. Pan and X. Wang), *SIAM J. on Matrix Analysis and Applications*, 24, 3, 660–677 (2003).
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25. "Randomized Preconditioning versus Pivoting" (by V. Y. Pan, G. Qian, and A.-L. Zheng), *Linear Algebra and Its Applications*, 438, 4, 1883–1889 (2013).
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27. "Random Multipliers Numerically Stabilize Gaussian and Block Gaussian Elimination: Proofs and an Extension to Low-rank Approximation", *Linear Algebra and Its Applications*, 481, 202–234 (2015).
28. "Nearly Optimal Refinement of Real Roots of a Univariate Polynomial" by Victor Y. Pan and Elias Tsigaridas, *J. of Symbolic Computations*, 74, 181–204 (2016). Proceedings

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11. “On Computations with Dense Structured Matrices”, Mathematics of Computation, 55, 191, 179–190 (1990). Proceedings version in ISSAC 1989.
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17. "A Fast, Preconditioned Conjugate Gradient Toeplitz Solver" (by V. Y. Pan and R. Schreiber), *Computers and Mathematics (with Applications)*, 24, 7, 17–24 (1992).
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