PUBLICATIONS (COMPLETE LIST CHRONOLOGICALLY)

Victor y. Pan

LISTS OF PAN'S PUBLICATIONS IN GOOGLE SCHOLAR AND DBLP INCLUDE

- 4 research monographs

- over 20 book chapters and survey articles

- over 170 refereed publications in journals

- over 80 refereed publications in conference proceedings

- OVER 11,000 CITATIONS

1 CLASSIFICATION BY RESEARCH SUBJECTS

ENUMERATION BELOW IS ACCORDING TO THE ORDER OF (i) THE BOOKS, (ii) SURVEYS AND BOOKS CHAPTERS AND (iii) RESEARCH PAPERS IN THE COMPLETE PUBLICATION LIST.

1. REAL AND COMPLEX FUNCTIONS: papers 1, 3.

2. ECONOMICS: papers 11-13, 15-18

3. LOWER BOUNDS IN ALGEBRAIC COMPUTATIONS: papers 5, 7, 10, 29, 49.

4. FUNDAMENTAL POLYNOMIAL OPERATIONS.
   a) EVALUATION: survey paper 1 (containing also research results), research papers 2, 4, 6-10, 19, 62, 70, 101, 105, 121, 140, 148, 166, 247-249, 253, 263, 267.
   b) INTERPOLATION: papers 62, 70, 105, 120, 140, 148, 159, 166, 247-249, 253, 263, 267 and survey paper 12.
   c) MULTIPLICATION: papers 24, 118 (multivariate case), 249, 263.
   d) DIVISION: papers 42, 48, 51-53, 58, 75, 86, 97, 103, 111, 249, 263.

5. MATH PROGRAMMING.
   a) LINEAR PROGRAMMING: papers 13, 38, 39, 43, 50, 55, 57.
   b) INTEGER LINEAR PROGRAMMING: papers 89, 93, 113, 152.
   c) NONLINEAR PROGRAMMING: paper 79.

6. FAST MATRIX MULTIPLICATION: book 1, survey papers 2 and 24, and papers 14, 20, 21, 23, 25, 30, 32, 33, 36, 37, 40, 95, 145, 157, 163, 222.

7. MULTIGRID ALGORITHMS.
   a) ALGEBRAIC MULTIGRID: paper 22.
   b) COMPACT MULTIGRID: papers 73, 77, 93, 109.

8. PARALLEL COMPUTATIONS (ALSO SEE RELEVANT ITEMS IN PARTS 9-14).

a) PROCESSOR EFFICIENT ALGORITHMS IN NC: book 2 (chapter 4) and papers 44-47, 50-58, 60-64, 66-69, 72, 74, 75, 80-82, 85, 88, 90, 93, 100, 102, 103, 106, 107, 111, 112, 115, 117, 119, 123, 125, 126, 129, 131-133, 138, 147, 163, 175.

b) NC EQUIVALENCE OF LINEAR PROGRAMMING AND EUCLIDEAN GCD: papers 89, 113, 152.

c) WORK-PRESERVING SPEED-UP: papers 91, 115, 122.

9. GRAPH ALGORITHMS.
a) MATCHING: papers 45, 63.
b) PATHS: item 6 in the list of book chapters; papers 54, 56, 66, 85, 90, 91, 122, 138, 147.

10. LINEAR SYSTEMS OF EQUATIONS AND MATRIX INVERSION (GENERAL INPUT MATRICES).
a) NEWTON'S ITERATION AND RESIDUAL CORRECTION PROCESSES: book 3 (chapter 6), item 9 in the list of reviews and book chapters, and papers 44, 69, 83, 175, 178, 211, 216, 226, 231, 251, 268.
b) RANDOMIZED ALGORITHMS: see section 18.
c) PARALLEL ALGORITHMS: book 2 and papers 44, 47, 60, 67, 74, 81, 82, 91, 122, 175, 238.

11. LINEAR SYSTEMS OF EQUATIONS, MATRIX INVERSION (TRIANGULAR, BANDED OR SPARSE INPUT), AND LOW RANK APPROXIMATION OF MATRICES: item 6 in the list of reviews and book chapters and papers 44, 107, 115, 117, 125, 272, 273.

12. LINEAR SYSTEMS OF EQUATIONS AND MATRIX INVERSION (STRUCTURED INPUT).
a) DISPLACEMENT TRANSFORMATION OF MATRIX STRUCTURE; APPLICATIONS TO POLYNOMIAL EVALUATION AND INTERPOLATION: book 3 and papers 71, 76, 140, 150, 156, 203, 248, 253, 259, 267.
b) NEWTON'S ITERATION AND RESIDUAL CORRECTION PROCESSES: book 3 (chapter 6), item 9 in the list of reviews and book chapters and papers 72, 83, 88, 93, 106, 132, 141, 178, 179, 187, 200, 201, 204, 211, 216, 229, 231, 251.
c) COMPRESSION OF THE DISPLACEMENTS: book 3 and papers 88, 93, 106, 108, 141, 165, 168, 175, 187, 211.
d) HOMOTOPIC/CONTINUATION TECHNIQUES: book 3 (chapter 6) and papers 93, 106, 178, 187, 200, 201, 211, 216, 231.
e) INVERSION OF DISPLACEMENT OPERATORS: book 3 and paper 194.
f) SOLUTION WITH LIFTING TECHNIQUES: papers 192, 226, 238.
g) SOLUTION WITH PRECONDITIONED CONJUGATE GRADIENT METHOD: papers 94, 128.
h) UNIFICATION OF SUPERFAST ALGORITHMS: book 3 and papers 71, 76, 150, 156, 159, 168.
i) OTHER METHODS: books 2 and 3 and papers 60, 62, 72, 74, 81, 102, 131-133, 168, 248, 249, 263.
j) APPLICATIONS TO POLYNOMIAL GCD AND RATIONAL INTERPOLATION: papers 133, 149, 159, 166, 195, 267.
k) NORM ESTIMATION: papers 254, 259.

13. DETERMINANT AND CHARACTERISTIC POLYNOMIAL: papers 60, 65, 67, 143, 146, 158, 160, 180, 197, 205, 208, 221.

14. ROOT-FINDING FOR POLYNOMIALS.
a) BOOK 4 and items 8, 10, 13, 18 and 22 in the list of survey articles and book chapters.
b) NEARLY OPTIMAL DIVIDE-AND-CONQUER ALGORITHMS: papers 126, 129, 183, 184, 186, 191 and book 4 (chapter 15).
c) OTHER NEARLY OPTIMAL ALGORITHMS: papers: 68, 80, 153, 169, 246, 250, 258, 262, 264, 269, 270, 274.

d) STRUCTURED MATRIX METHODS: item 17 in the list of surveys and book chapters; papers 198, 202, 207, 210, 212, 227, 233, 235, 239, 243, 246, 250, 252.

e) REAL POLYNOMIAL ROOT-FINDERS: papers 68, 80, 153, 213, 235, 246, 252, 258, 261.

g) OTHER ROOT-FINDING ALGORITHMS: papers 41, 46, 59, 61, 99, 114, 116, 124, 130, 134, 135, 171, 177, 206, 210, 233-236, 239, 241, 242, 264, 271.

h) APPLICATION TO APPROXIMATE POLYNOMIAL GCD: papers 149, 182.

15. ROOT-FINDING FOR SYSTEMS OF POLYNOMIALS: papers 136, 137, 139, 144, 151, 155, 170, 176, 185, 189, 193, 197, 208.

16. EIGEN-SOLVING: papers 64, 78, 80, 84, 96, 98, 110, 153, 167, 206, 207, 212, 218, 223, 227, 243.

17. SYMBOLIC-NUMERICAL COMPUTATIONS (ALSO SEE PARTS 8, 12-15, and 19).

a) BOOKS AND SURVEYS: books 2 and 3 and 4, 5, 8-14, 16-18 and 22 in the list of SURVEY ARTICLES AND BOOK CHAPTERS.

b) APPROXIMATE POLYNOMIAL GCD: papers 149, 182.

c) NUMERICAL COMPUTATION OF DETERMINANTS: papers 160, 180, 221.

d) RECOVERY OF A RATIONAL NUMBER FROM ITS NUMERICAL APPROXIMATION: paper 199.

e) NUMERICAL COMPUTATIONS WITH ERROR-FREE OUTPUT: papers 154, 224.

18. RANDOMIZED MATRIX ALGORITHMS: papers 214, 215, 217, 219, 221, 223, 225, 228, 230, 232, 234, 237, 244, 245, 255, 257, 260, 265, 266.

19. DEGENERACY AND CONDITIONING: 220, 254, 259.

20. BOOLEAN COMPLEXITY OF ALGEBRAIC COMPUTATIONS: papers 26, 28, 31, 34, 40, 49, 53, 58, 73, 77, 246, 249, 250, 258, 262-264.

21. MANIPULATION WITH INTEGERS:
(a) BINARY SEGMENTATION: book 1, papers 87, 158, 224.
(b) RATIONAL RECONSTRUCTION, EUCLIDEAN ALGORITHM: papers 190, 196, 199.

22. LINEAR RECURRENCES: papers 142, 172.

2   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).

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2. "How Can We Speed Up Matrix Multiplication?", SIAM Review, 26, 3, 393–415 (1984).

3. "Linear Systems of Algebraic Equations", in Encyclopedia of Physical Sciences and Technology, 7, 304–329 (1987), (first edition, Marvin Yelles, editor); 8, 779–804 (1992) (second edition), and 8, 617–642 (2001) (third edition, Robert A. Meyers, editor), Academic Press, San Diego, California.

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17. "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).

18. "Preface to the Special Issue on Symbolic–Numerical Algorithms" (by D. A. Bini, V. Y. Pan, and J. Verschelde), Theoretical Computer Science, 409, 2, 155–157 (2008).

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2. "Some Schemes for the Evaluation of Polynomials with Real Coefficients", Doklady Akademii Nauk SSSR (in Russian), 127, 2, 266–269 (1959).

3. "On Approximation of Analytic Functions by Rational Ones", Uspekhi Matematicheskikh Nauk (in Russian), 16, 5 (101), 195–197 (1961).

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27. "A Unified Approach to the Analysis of Bilinear Algorithms", Journal of Algorithms, 2, 301–310 (1981).

28. "The Bit Operation Complexity of Matrix Multiplication and All Pair Shortest Path Problem", Computers and Mathematics (with Applications), 7, 5, 431–438 (1981).

29. "The Lower Bounds on the Additive Complexity of Bilinear Problems in Terms of Some Algebraic Quantities", Information Processing Letters, 13, 2, 71–72 (1981).

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65. "Computing the Determinant and the Characteristic Polynomial of a Matrix via Solving Linear Systems of Equations", Information Processing Letters, 28, 2, 71–75 (1988).

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