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Curriculum Vitae – Allan Pinkus

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Technion, Israel Institute of Technology
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Date and place of birth: September 19, 1946; Montreal, Canada
Marital Status: Married to Rachel (nee Lew) + 4 + 9
Citizenship: Israeli, Canadian

Academic Degrees

1968 B. Sc. Mathematics (1st Class Honours), McGill University, Montreal, Canada
1974 Ph. D. Mathematics, Weizmann Institute of Science, Rehovot, Israel.
Thesis: Topics in Approximation Theory.
Advisor: Professor S. Karlin.

Professional Experience

1969–70 Research Assistant, Department of Mathematics, Stanford University,
Stanford, CA
1974 Summer Department of Mathematics, Stanford University, Stanford, CA
1974–75 IBM Postdoctoral Fellow, T. J. Watson Research Center,
Yorktown Heights, NY
1975–77 Assistant Scientist, Mathematics Research Center, University of
Wisconsin, Madison, WI
1977–80 Senior Lecturer, Department of Mathematics, Technion
1980 Summer Visiting Associate Professor, Mathematics Research Center, University
of Wisconsin, Madison, WI
1980–86 Associate Professor, Department of Mathematics, Technion
1981–82 NERC Fellow, Department of Mathematics, University of Lancaster,
Lancaster, England
1984 Summer Visiting Professor, Department of Mathematics, University of Alberta,
Edmonton, Canada
1986 Summer Visiting Professor, Department of Mathematics, University of Erlangen,
Erlangen, West Germany
1986–87 Professor, Department of Mathematics, Tel Aviv University
1987–2010 Professor, Department of Mathematics, Technion
1988–89 Visiting Professor, Department of Mathematics, University of California
San Diego, San Diego, CA

- 1993 September Visiting Professor, Department of Mathematics, Beijing Normal University, Beijing, China
- 1995 May Visiting Professor, Department of Mathematics, University of Cagliari, Cagliari, Italy
- 1995 July Visiting Professor, Department of Mathematics, ETH, Zurich, Switzerland
- 1995 Sept.-Oct. Visiting Professor, Kolmogorov Stipend, Department of Mathematics and Mechanics, Moscow State University, Moscow, Russia
- 1998 Mar.-June Visiting Professor, Department of Mathematics, Ohio State University, Columbus, Ohio
- 1998 June-Sept. Visiting Professor, DAMTP, University of Cambridge, Cambridge, England
- 1999 March Visiting Professor, Department of Mathematics, University of Witwatersrand, Johannesburg, South Africa
- 1999 September Visiting Professor, Department of Mathematics, University of Zaragoza, Zaragoza, Spain
- 2000 July Visiting Professor, Department of Mathematics, National University of Singapore, Singapore
- 2002 September Frontier Lecturer, Department of Mathematics, Texas A& M University, College Station, Texas
- 2003 Aug.-Oct. Visiting Professor, Department of Mathematics, Université Montréal
- 2003 November Visiting Professor, Department of Mathematics, Vanderbilt University
- 2004 January Visiting Professor, Department of Mathematics, City University of Hong Kong
- 2009 March Visiting Professor, Department of Mathematics, National University of Singapore, Singapore
- 2009 April Visiting Professor, Department of Mathematics, City University of Hong Kong
- 2009 May Visiting Professor, Department of Mathematics, Beijing Normal University, China
- 2009 June-Aug. Visiting Professor, Department of Computer Science, University of British Columbia, Canada
- 2010- Professor Emeritus, Department of Mathematics, Technion
- 2011 January Visiting Professor, Department of Mathematics, City University of Hong Kong
- 2011 February Visiting Professor, Centre for Mathematics and its Applications, Australian National University
- 2012 April Visiting Professor, Mathematics Research Institute, The Ohio State University

Prizes

- 1985 Mahler Prize, Technion
- 1989 New England Academic Award, Technion
- 2005 Mahler Prize, Technion

Active Participation in International Conferences

(Only conferences where talk given, excluding talks given by joint authors)

1. Approximation Theory II, Austin, Texas, January 1976
2. Numerical Integration, Oberwolfach, W. Germany, October, 1978
3. Workshop on Approximation Theory, Haifa, June, 1980
4. International Conference on Constructive Function Theory, Varna, Bulgaria, June, 1981
5. Approximationstheorie, Oberwolfach, W. Germany, November, 1981
6. Approximation Theory IV, College Station, Texas, January, 1983 (plenary lecture)
7. Alfred Haar Memorial Conference, Budapest, Hungary, August, 1985
8. Short Course on Approximation Theory, AMS, New Orleans, January, 1986 (plenary lecture)
9. Multidimensional Approximation Theory, Oberwolfach, W. Germany, February, 1988
10. Constructive Approximation Theory and Applications, Jerusalem, May, 1988
(plenary lecture)
11. International Conference on Constructive Function Theory, Varna, Bulgaria, June, 1991
(plenary lecture)
12. International Conference in Functional Analysis and Approximation Theory,
Acquafredda di Maratea, Italy, September, 1992 (plenary lecture)
13. International Conference on Advances in Computational Mathematics, New Delhi, India,
January, 1993 (plenary lecture)
14. Open Problems in Approximation Theory, Voneshta Voda, Bulgaria, June, 1993
(plenary lecture)
15. Konstruktive Approximationstheorie, Oberwolfach, Germany, August, 1993
16. International Workshop on Total Positivity and its Applications, Jaca, Spain,
September, 1994 (plenary lecture)
17. International Dortmund Meeting on Approximation Theory, Dortmund, Germany,
March, 1995 (plenary lecture)
18. Symposium on Approximation Theory and Numerical Analysis, Nicosia, Cyprus,
April, 1995 (plenary lecture)
19. International Conference on Approximation Theory and Function Series, Budapest,
Hungary, August, 1995 (plenary lecture)
20. Differential Equations and Methods of Approximation, Hanoi, Vietnam, February, 1996
(plenary lecture)
21. Curves and Surfaces, Chamonix, France, June, 1996 (plenary lecture)
22. Foundations of Computational Mathematics, Rio de Janeiro, Brazil, January, 1997
23. Numerical Methods in Approximation Theory, Oberwolfach, May, 1997
24. Approximation Theory IX, Nashville, January, 1998
25. Conference in Honor of J. Szabados, Budapest, August, 1998 (plenary lecture)

26. Harmonic Analysis and Approximations, Armenia, September, 1998 (plenary lecture)
27. Second Joint Cyprus-Israel Mathematics Workshop, Tel-Aviv, May, 2000.
28. Workshop on Analysis, Budapest, June, 2000.
29. Smalefest 2000, Hong Kong, July, 2000.
30. BIT 40th Anniversary Meeting, Lund, Sweden, August, 2000.
31. Tenth International Conference on Approximation Theory, St. Louis, Missouri, March 26–29, 2001 (plenary lecture)
32. 3rd International Meeting on Approximation Theory, Bommerholz, Germany, August 20–24, 2001 (plenary lecture)
33. 2nd International Meeting on Approximation Theory, Ubeda, Spain, September 6–9, 2001 (plenary lecture)
34. Workshop Approximationstheorie, Erlangen, Germany, February 8, 2002 (plenary lecture)
35. Constructive Function Theory, Varna, Bulgaria, June 19–23, 2002 (plenary lecture)
36. The Second International Symposium on Computing Science, Guangzhou, China, December 20–23, 2002 (plenary lecture)
37. Constructive Mathematics: A meeting honoring Carl de Boor, Schloss Dagstuhl, Germany, May 26–30, 2003.
38. 3rd Joint Cyprus-Israel Mathematics Workshop, Nicosia, Cyprus, June 5–7, 2003.
39. The Wladyslaw Orlicz Centenary Conference and Function Spaces VII, Poznan, July 21–25, 2003 (plenary lecture).
40. Victoria International Conference 2004, Wellington, New Zealand, February 9–13, 2004.
41. Approximation and Probability, Bedlewo, September 20–24, 2004 (plenary lecture).
42. Multivariate Approximation and Interpolation, with Applications, University of Hohenheim, October 13–17, 2004.
43. Extremal Problems and Approximation, Moscow, December 16–18, 2004.
44. The 2005 Haifa Matrix Conference, January 3–7, 2005.
45. Fejér-Riesz Conference, Eger, Hungary, June 9–13, 2005 (plenary lecture).
46. Harmonic Analysis and Approximations, III, Tsakhadzor, Armenia, September 20–27, 2005 (plenary lecture).
47. Workshop Approximation Theory and Geometric Modelling, Erlangen-Nuremberg, Germany, February 10, 2006 (plenary lecture).
48. International Symposium on Approximation Theory and Remote Sensing Applications, Kunming, China, April 22–25, 2006 (plenary lecture).
49. II Jaen Conference on Approximation Theory, Ubeda, Spain, June 26–July 1, 2011 (plenary lecture).
50. Paul Turán Memorial Conference, Budapest, Hungary, August 22–26, 2011 (semi-plenary lecture).
51. Israeli-Polish Mathematical Meeting, Lodz, Poland, September 11–15, 2011.
52. 3rd Dolomites Workshop on Constructive Approximation and Applications, Alba di Canazei, Italy, September 9–14, 2012.
53. The 2012 Haifa Matrix Theory Conference, November 12–15, 2012.
54. The International Conference on Actual Problems of Mathematics and Informatics,

- Baku, Azerbaijan, May 29–31, 2013 (plenary lecture).
55. Erdős Centennial, Budapest, Hungary, July 1–5, 2013.
 56. Multivariate Approximation and Interpolation with Applications, Erice, Sicily, September 25–30, 2013.
 57. Algebraic Geometry, Braids, Analysis, Haifa, May 18–21, 2015.
 58. First Joint Mexico-Israel Mathematical Meeting, Oaxaca, September 7–11, 2015.
 59. International Conference on Multivariate Approximation, Schloss Rauischholzhausen, Germany, March 31– April 5, 2016.
 60. 12th International Conference on Approximation and Optimization in the Caribbean AppOpt 2016, Havana, Cuba, June 6–10, 2016.

Membership in Scientific Associations

American Mathematical Society; Israel Mathematical Union

List of Publications

1. S. Karlin, A. Pinkus, Oscillation Properties of Generalized Characteristic Polynomials for Totally Positive and Positive Definite Matrices, *Lin. Alg. and Appl.* **8** (1974), 281–312.
2. A. Pinkus, Representation Theorems for Tchebycheffian Polynomials with Boundary Conditions and their Applications, *Israel J. Math.* **17** (1974), 11–34.
3. A. Pinkus, Asymptotic Minimum Norm Quadrature Formulae, *Numer. Math.* **24** (1975), 163–175.
4. A. Pinkus, Applications of Representation Theorems to problems of Chebyshev Approximation with Constraints, in *Studies in Spline Functions and Approximation Theory*, S. Karlin, C. A. Micchelli, A. Pinkus, I. J. Schoenberg, 83–111, Academic Press, N. Y., 1976.
5. S. Karlin, A. Pinkus, Gaussian Quadrature Formulae with Multiple Nodes, in *Studies in Spline Functions and Approximation Theory*, S. Karlin, C. A. Micchelli, A. Pinkus, I. J. Schoenberg, 113–141, Academic Press, N. Y., 1976.
6. S. Karlin, A. Pinkus, An Extremal Problem of Multiple Gaussian Nodes, in *Studies in Spline Functions and Approximation Theory*, S. Karlin, C. A. Micchelli, A. Pinkus, I. J. Schoenberg, 143–162, Academic Press, N. Y., 1976.
7. S. Karlin, A. Pinkus, Interpolation by Splines with Mixed Boundary Conditions, in *Studies in Spline Functions and Approximation Theory*, S. Karlin, C. A. Micchelli, A. Pinkus, I. J. Schoenberg, 305–325, Academic Press, N. Y., 1976.
8. S. Karlin, A. Pinkus, Divided Differences and other Non-linear Existence Problems at Extremal Points, in *Studies in Spline Functions and Approximation Theory*, S. Karlin, C. A. Micchelli, A. Pinkus, I. J. Schoenberg, 327–352, Academic Press, N. Y., 1976.
9. A. Pinkus, One-Sided L^1 -Approximation by Splines with Fixed Knots, *J. Approx. Theory* **18** (1976), 130–135.

10. A. Pinkus, A Simple Proof of the Hobby-Rice Theorem, *Proc. Amer. Math. Soc.* **60** (1976), 82–84.
11. C. A. Micchelli, A. Pinkus, Moment Theory for Weak Chebyshev Systems with Applications to Monosplines, Quadrature Formulae and Best One-Sided L^1 Approximation by Spline Functions with Fixed Knots, *SIAM J. Math. Anal.* **8** (1977), 206–230.
12. C. A. Micchelli, A. Pinkus, On n -Widths in L^∞ , *Trans. Amer. Math. Soc.* **234** (1977), 139–174.
13. C. A. Micchelli, A. Pinkus, Total Positivity and the Exact n -Width of Certain Sets in L^1 , *Pacific J. Math.* **71** (1977), 499–515.
14. C. A. Micchelli, A. Pinkus, On a Best Estimator for the Class M^r using only Function Values, *Indiana Math. J.* **26** (1977), 751–759.
15. C. de Boor, A. Pinkus, Backward Error Analysis for Totally Positive Linear Systems, *Numer. Math.* **27** (1977), 485–490.
16. C. A. Micchelli, A. Pinkus, Best Mean Approximation to a 2-dimensional Kernel by Tensor Products, *Bull. Amer. Math. Soc.* **83** (1977), 400–402.
17. J. W. Lee, A. Pinkus, Spectral Properties and Oscillation Theorems for Mixed Boundary-Value Problems of Sturm-Liouville Type, *J. Differ. Eqs.* **27** (1978), 190–213.
18. A. Pinkus, Some Extremal Problems of Perfect Splines and the Pointwise Landau Problem on the Finite Interval, *J. Approx. Theory* **23** (1978), 37–64.
19. C. A. Micchelli, A. Pinkus, Some Problems in the Approximation of Functions of Two Variables and n -Widths of Integral Operators, *J. Approx. Theory* **24** (1978), 51–77.
20. C. de Boor, A. Pinkus, Proof of the Conjecture of Bernstein and Erdos concerning the Optimal Nodes for Polynomial Interpolation, *J. Approx. Theory* **24** (1978), 289–303.
21. C. A. Micchelli, A. Pinkus, The n -Widths of Rank $n + 1$ Kernels, *J. Integral Equations* **1** (1979), 111–130.
22. A. Pinkus, On n -Widths of Periodic Functions, *J. d'Analyse Math.* **35** (1979), 209–235.
23. A. Pinkus, Z. Ziegler, Interlacing Properties of the Zeros of the Error Functions in Best L^p Approximation, *J. Approx. Theory* **27** (1979), 1–18.
24. A. Pinkus, Matrices and n -Widths, *Lin. Alg. and Appl.* **27** (1979), 245–278.
25. L. Brutman, A. Pinkus, On the Erdos Conjecture concerning Minimal Norm Interpolation on the Unit Circle, *SIAM J. Numer. Anal.* **17** (1980), 373–375.
26. A. Pinkus, Bernstein's Comparison Theorem and a Problem of Braess, *Aequat. Math.* **23** (1981), 98–107.
27. A. Pinkus, Best Approximations by Smooth Functions, *J. Approx. Theory* **33** (1981), 147–178.
28. C. de Boor, A. Pinkus, The Approximation of a Totally Positive Band Matrix by Strictly Totally Positive One, *Lin. Alg. and Appl.* **42** (1982), 81–98.
29. A. Pinkus, O. Shisha, Variations on the Chebyshev and L^q Theories of Best Approximation, *J. Approx. Theory* **35** (1982), 148–168.

30. C. de Boor, S. Friedland, A. Pinkus, Inverses of Infinite Sign Regular Matrices, *Trans. Amer. Math. Soc.* **274** (1982), 59–68.
31. C. de Boor, R. Q. Jia, A. Pinkus, Structure of Invertible (Bi)-infinite Totally Positive Matrices, *Lin. Alg. and Appl.* **47** (1982), 41–55.
32. G. J. O. Jameson, A. Pinkus, Positive and Minimal Projections in Function Spaces, *J. Approx. Theory* **37** (1983), 182–195.
33. A. Pinkus, Some Extremal Problems for Strictly Totally Positive Matrices, *Lin. Alg. and Appl.* **64** (1985), 141–156.
34. A. Pinkus, n -Widths of Sobolev Spaces in L^p , *Constr. Approx.* **1** (1985), 15–62.
35. J. M. Anderson, P. Erdos, A. Pinkus, O. Shisha, The Closed Linear Span of $\{x^k - c_k\}_1^\infty$, *J. Approx. Theory* **43** (1985), 75–80.
36. A. Pinkus, V. Totik, One-Sided L^1 -Approximation, *Canad. Math. Bull.* **29** (1986), 84–90.
37. A. Pinkus, Unicity Subspaces in L^1 -Approximation, *J. Approx. Theory* **48** (1986), 226–250.
38. A. Pinkus, H. Strauss, One-Sided L^1 -Approximation to Differentiable Functions, *Approx. Theory Appl.* **3** (1987), 81–96.
39. A. Pinkus, B. Wajnryb, Necessary Conditions for Uniqueness in L^1 -Approximation, *J. Approx. Theory* **53** (1988), 54–66.
40. A. Pinkus, H. Strauss, Best Approximation with Coefficient Constraints, *IMA J. Numer. Anal.* **8** (1988), 1–22.
41. A. Pinkus, Continuous Selections for the Metric Projection on C_1 , *Constr. Approx.* **4** (1988), 85–96.
42. A. Pinkus, On Smoothest Interpolants, *SIAM J. Math. Anal.* **19** (1988), 1431–1441.
43. L. Elsner, D. Hershkowitz, A. Pinkus, Functional Inequalities for Spectral Radii of Non-Negative Matrices, *Lin. Alg. and Appl.* **129** (1990), 103–130.
44. A. Pinkus, H. Strauss, L^1 -Approximation with Constraints, *Trans. Amer. Math. Soc.* **322** (1990), 239–261.
45. C. A. Micchelli, A. Pinkus, Descartes Systems from Corner Cutting, *Constr. Approx.* **7** (1991), 161–194.
46. A. Pinkus, D. Wulbert, The Multi-Dimensional Van Neumann Alternating Direction Search Algorithm in $C(B)$ and L_1 , *J. Func. Anal.* **104** (1992), 121–148.
47. A. Pinkus, Uniqueness in Vector-Valued Approximation, *J. Approx. Theory* **73** (1993), 17–92.
48. D. Braess, A. Pinkus, Interpolation by Ridge Functions, *J. Approx. Theory* **73** (1993), 218–236.
49. M. Leshno, V. Ya. Lin, A. Pinkus, S. Schocken, Multilayer Feedforward Networks with a Non-Polynomial Activation Function can Approximate any Function, *Neural Networks* **6** (1993), 861–867.

50. V. Ya. Lin, A. Pinkus, Fundamentality of Ridge Functions, *J. Approx. Theory* **75** (1993), 295–311.
51. C. A. Micchelli, A. Pinkus, Variational Problems Arising from Balancing Several Error Criteria, *Rendiconti di Matematica* **14** (1994), 37–86.
52. A. Pinkus, B. Wajnryb, Multivariate Polynomials: A Spanning Question, *Const. Approx.* **11** (1995), 165–180.
53. A. Pinkus, B. Wajnryb, A Problem of Approximation Using Multivariate Polynomials, *Uspekhi Mat. Nauk* **50** (1995), 89–110 (in Russian); *Russian Math. Surveys* **50** (1995), 319–340.
54. C. H. FitzGerald, C. A. Micchelli, A. Pinkus, Functions that Preserve Families of Positive Semidefinite Matrices, *Linear Alg. and Appl.* **221** (1995), 83–102.
55. A. Pinkus, TDI-Subspaces of $C(\mathbb{R}^d)$ and some Density Problems from Neural Networks, *J. Approx. Theory* **85** (1996), 269–287.
56. M. Buhmann, A. Pinkus, On a Recovery Problem, *Annals of Num. Math.* **4** (1997), 129–142.
57. O. Davydov and A. Pinkus, Best Approximation and Cyclic Variation Diminishing Kernels, *J. Approx. Theory* **89** (1997), 380–423.
58. A. Pinkus, Uniqueness of Smoothest Interpolants, *East J. of Approx.* **3** (1997), 377–380.
59. A. Pinkus, An Interlacing Property of Eigenvalues of Strictly Totally Positive Matrices, *Linear Alg. Appl.* **279** (1998), 201–206.
60. M. D. Buhmann, A. Pinkus, Identifying Linear Combinations of Ridge Functions, *Advances in Applied Mathematics* **22** (1999), 103–118.
61. V. Maiorov, A. Pinkus, Lower Bounds for Approximation by MLP Neural Networks, *Neurocomputing* **25** (1999), 81–91.
62. A. Pinkus, Approximation Theory of the MLP Model in Neural Networks, *Acta Numerica* **8** (1999), 143–195.
63. A. Pinkus, On a Problem of G. G. Lorentz, *J. Approx. Theory* **103** (2000), 29–54.
64. A. Pinkus, Weierstrass and Approximation Theory, *J. Approx. Theory* **107** (2000), 1–66.
65. J. M. Carnicer, J. M. Peña, A. Pinkus, On Zero-Preserving Linear Transformations, *J. Math. Anal. Appl.* **266** (2002), 237–258.
66. J. M. Carnicer, J. M. Peña, A. Pinkus, On some Zero-Increasing Operators, *Acta Math. Hungar.* **94** (2002), 173–190.
67. U. Elias, A. Pinkus, Non-Linear Eigenvalue-Eigenvector Problems for STP Matrices, *Proc. Royal Soc. Edinburgh Section A* **132** (2002), 1307–1331.
68. U. Elias, A. Pinkus, Non-Linear Eigenvalue Problems for a Class of Ordinary Differential Equations, *Proc. Royal Soc. Edinburgh Section A* **132** (2002), 1333–1359.

69. A. Pinkus, Negative Theorems in Approximation Theory, *Amer. Math. Monthly* **110** (2003), 900–911.
70. A. Atzmon, A. Pinkus, Rank Restricting Functions, *Lin. Alg. Appl.* **372** (2003), 305–323.
71. C. de Boor, A. Pinkus, The B-spline Recurrence Relations of Chakalov and of Popoviciu, *J. Approx. Theory* **124** (2003), 115–123.
72. A. Pinkus, Strictly Positive Definite Functions on a Real Inner Product Space, *Adv. Comp. Math.* **20** (2004), 263–271.
73. A. Pinkus, Interpolation by Matrices, *Elec. J. Lin. Alg.* **11** (2004), 281–291.
74. A. Pinkus, Strictly Hermitian Positive Definite Functions, *Journal d'Analyse Math.* **94** (2004), 293–318.
75. E. L. Ortiz, A. Pinkus, Herman Müntz: A Mathematician's Odyssey, *Math. Intell.* **27** (2005), 22–31.
76. A. Pinkus, Density in Approximation Theory, *Surveys in Approximation Theory* **1** (2005), 1–45.
77. A. Pinkus, D. Wulbert, Extending n -Convex Functions, *Studia Math.* **171** (2005), 125–152.
78. D. Hershkowitz, A. Pinkus, On Nonnegative Sign Equivalent and Sign Similar Factorizations of Matrices, *Electronic Journal of Linear Algebra* **16** (2007), 162–170.
79. A. Pinkus, Zero Minors of Totally Positive Matrices, *Electronic Journal of Linear Algebra* **17** (2008), 532–542.
80. A. Kroó, A. Pinkus, Strong Uniqueness, *Surveys in Approximation Theory* **5** (2010), 1–91.
81. R. Pinchasi, A. Pinkus, Dominating Subsets under Projections, *SIAM J. Discrete Math.* **24** (2010), 910–920.
82. A. Kroó, A. Pinkus, Y. Xu, Borislav D. Bojanov: 18 November 1944 - 8 April 2009, *J. Approx. Theory* **162** (2010), 1739–1765.
83. A. Pinkus, Sparse Representations and Approximation Theory, *J. Approx. Theory* **163** (2011), 388–412.
84. A. Pinkus, J. M. Quesada, On Chebyshev-Markov-Krein Inequalities, *J. Approx. Theory* **164** (2012), 1262–1282.
85. A. Pinkus, On Best Rank n Matrix Approximations, *Linear Alg. Appl.* **437** (2012), 2179–2199.
86. Y. Benyamini, A. Kroó, A. Pinkus, L^1 -Approximation and Finding Solutions with Small Support, *Const. Approx.* **36** (2012), 399–431.
87. A. Kroó, A. Pinkus, On Stability of the Metric Projection Operator, *SIAM J. Math. Analysis* **45** (2013), 639–661.
88. A. Pinkus, On Ridge Functions, *Azerbaijan Journal of Mathematics* **3** (2013), 122–130.

89. V. E. Ismailov, A. Pinkus, Interpolation on Lines by Ridge Functions, *J. Approx. Theory* **175** (2013), 91–113.
90. A. Pinkus, Smoothness and Uniqueness in Ridge Function Representation, *Indagationes Mathematicae* **24** (2013), 725–738.
91. A. Pinkus, The Alternating Algorithm in a Uniformly Convex and Uniformly Smooth Banach Space, *J. Math. Anal. Appl.* **421** (2015), 747–753.

Books

1. S. Karlin, C. A. Micchelli, A. Pinkus, I. J. Schoenberg, *Studies in Spline Functions and Approximation Theory*, Academic Press, N. Y., 1976. (A collection of papers in which Nos. 4–8 of the above list of articles appear.)
2. A. Pinkus, *n-Widths in Approximation Theory*, Ergebnisse, Springer-Verlag, 291 pages, 1985.
3. A. M. Pinkus, *On L^1 -Approximation*, Cambridge Tracts in Mathematics, Cambridge University Press, Vol. 93, 239 pages, 1989.
4. P. Nevai, A. Pinkus, (editors) *Progress in Approximation Theory*, Academic Press, 1991.
5. S. Zafrany, A. Pinkus, *Fourier Series and Integral Transforms*, Michlol, 182 pages, 1995. Teaching Textbook in Hebrew.
6. A. Pinkus, S. Zafrany, *Fourier Series and Integral Transforms*, Cambridge University Press, 189 pages, 1997.
7. N. Dyn, D. Leviatan, D. Levin, A. Pinkus, (editors) *Multivariate Approximation and Applications*, Cambridge University Press, 284 pages, 2001.
8. L. M. Pardo, A. Pinkus, E. Süli, M. J. Todd, (editors) *Foundations of Computational Mathematics, Santander 2005*, London Mathematical Society Lecture Note Series 331, Cambridge University Press, 394 pages, 2006.
9. F. Cucker, A. Pinkus, M. J. Todd, (editors) *Foundations of Computational Mathematics, Hong Kong 2008*, London Mathematical Society Lecture Note Series 363, Cambridge University Press, 276 pages, 2009.
10. A. Pinkus, *Totally Positive Matrices*, Cambridge Tracts in Mathematics, Cambridge University Press, Vol. 181, 182 pages, 2010.
11. F. Cucker, T. Krick, A. Pinkus, A. Szanto, (editors) *Foundations of Computational Mathematics, Budapest 2011*, London Mathematical Society Lecture Note Series 403, Cambridge University Press, 2012.
12. A. Pinkus, *Ridge Functions*, Cambridge Tracts in Mathematics, Cambridge University Press, Vol. 205, 218 pages, 2015.

Conference Proceedings

1. C. A. Micchelli, A. Pinkus, The Exact Asymptotic Value for the n -Width of Smooth Functions in L^∞ , *Approximation Theory, II*, Eds., G. G. Lorentz, C. K. Chui, L. L. Schumaker, 469–474, Academic Press, N. Y., 1976.
2. C. A. Micchelli, A. Pinkus, On n -Widths and Optimal Recovery in M^r , *Approximation Theory, II*, Eds., G. G. Lorentz, C. K. Chui, L. L. Schumaker, 475–478, Academic Press, N. Y., 1976.
3. C. A. Micchelli, A. Pinkus, On n -Widths in L^∞ , II: Some related extremal problems, *Constructive Function Theory*, 77, 403–416, Sofia, 1980.
4. A. Pinkus, O. Shisha, A Variation on the Chebyshev Theory of Best Approximation, *Constructive Function Theory*, 81, 479–481, Sofia, 1983.
5. A. Pinkus, n -Widths in Approximation Theory: A Survey, *Approximation Theory IV*, Eds., C. K. Chui, L. L. Schumaker, J. D. Ward, 153–186, Academic press, N. Y., 1983.
6. A. Pinkus, n -Widths and Optimal Recovery, *Proc. of Symposia in Applied Math.*, Vol. 36, Ed., C. de Boor, 51–66, Amer. Math. Soc., Providence, 1986.
7. C. A. Micchelli, A. Pinkus, Some Remarks on Nonnegative Polynomials on Polyhedra, *Probability, Statistics, and Mathematics: Papers in Honor of Samuel Karlin*, 163–186, Academic Press, N. Y., 1989.
8. V. Ya. Lin, A. Pinkus, Approximation of Multivariate Functions, *Advances in Computational Mathematics: New Delhi, India*, Eds., H. P. Dikshit, C. A. Micchelli, 257–265, World Scientific, Singapore, 1994.
9. A. Pinkus, Some Density Problems in Multivariate Approximation, *Approximation Theory: Proceedings of the International Dortmund Meeting IDoMAT 95*, Eds., Manfred W. Müller, Michael Felten, Detlef H. Mache, 277–284, Akademie Verlag, Berlin, 1995.
10. A. Pinkus, Spectral Properties of Totally Positive Kernels and Matrices, *Total Positivity and its Applications*, eds. M. Gasca and C. A. Micchelli, 477–511, Kluwer, Dordrecht, 1996.
11. A. Pinkus, Approximating by Ridge Functions, *Surface Fitting and Multiresolution Methods*, eds. A. Le Méhauté, C. Rabut, L. L. Schumaker, 279–292, Vanderbilt Univ. Press, Nashville, 1997.
12. A. Pinkus, Some Remarks on Zero-Increasing Transformations, *Approximation Theory X: Abstract and Classical Analysis*, eds. C. K. Chui, L. L. Schumaker, J. Stoeckler, 333–352, Vanderbilt Univ. Press, Nashville, 2002.
13. A. Pinkus, Density Methods and Results in Approximation Theory, *Orlicz Centenary Volume, Banach Center Publications, Volume 64*, eds. Z. Ciesielski, A. Pelczynski, L. Skrzypczak, 173–192, Institute of Mathematics, Polish Academy of Sciences, Warszawa, 2004.

Book Reviews and Such

1. Review of “Chebyshev Splines and Kolmogorov Inequalities”, by S. Bagdasarov. *J. Approx. Theory* **106** (2000), 294–295.
2. Ridge Functions, in *Supplement III, Kluwer Encyclopaedia of Mathematics*, Managing Editor: M. Hazewinkel, Kluwer Academic Publishers, p. 331–332, 2002.
3. Zolotarev Polynomials, in *Supplement III, Encyclopaedia of Mathematics*, . Managing Editor: M. Hazewinkel, Kluwer Academic Publishers, p. 463–464, 2002.
4. G. Kutyniok, A. Pinkus, H. Rauhut and V. Temlyakov, Preface to the Special Issue on Sparse Approximate Solution of Linear Systems, in *Lin. Alg. Appl.* **441** (2014), 1–3.

Editorship of Journals

1. Editor, *Constructive Approximation*, (Springer-Verlag), 1983–
2. Associate Editor, *Journal of Approximation Theory*, (Academic Press), 1983–1989.
Editor-in-Chief, *Journal of Approximation Theory*, (Academic Press), 1990–1999
Editor, *Journal of Approximation Theory*, (Academic Press), 2000–
3. Editor, *Surveys in Approximation Theory*, (e-journal), 2005–
4. Associate Editor, *Revista Matematica Complutense (REMC)*, 2010 –

Special Editorial Duties

1. Special Editor (with A. Cavaretta) of Volume 72, Number 1, January, 1993, of *Journal of Approximation Theory* dedicated to the memory of I. J. Schoenberg.
2. Special Editor (with C. de Boor) of 1945 historical article by V. L. Goncharov which appeared in Volume 106, Number 1, September, 2000 of *Journal of Approximation Theory*.
3. Special Editor (with G. Kutyniok, H. Rauhut, V. Temlyakov) of Volume 441, 2014, of *Linear Algebra and its Applications* issue on *Sparse Approximate Solution of Linear Systems*.

Grants (excluding internal grants, visiting fellowship grants and student awards)

U. S. Army, European Research Office, DAJA37–81–C–0234, *Optimal Reconstruction and n -Widths*, May 1981–May 1983, Principal Investigator.

Conference Organizer

1. Joint US–Israel Workshop on *Constructive Approximation Theory and Applications*, Jerusalem, May 23–27, 1988. (Sponsored by BSF and NSF.)
2. *Special Semester in Approximation Theory*. Technion, April – June, 1994.
3. International Conference on *Constructive Approximation and its Applications*, Tel-Aviv University, Tel-Aviv, May 17–20, 1994.
4. International Workshop on *Total Positivity and its Applications*, Jaca, Spain, September 26–30, 1994.
5. Approximation Theory Sessions, at *AMS-IMU Conference*, Jerusalem, May 24–26, 1995
6. International Workshop on *Multivariate Approximation and Interpolation with Applications in CAGD, Signal and Image Processing*, Eilat, September 7–11, 1998.
7. *Curves and Surfaces*, St. Malo, France, July 1–7, 1999, (Scientific Committee).
8. Workshop on Approximation Theory within framework of *FoCM Conference*, Oxford, July, 1999.
9. Second Joint Cyprus-Israel Mathematics Workshop on *Approximation Theory, Computational Mathematics and Numerical PDE*, Tel-Aviv, May 25–26, 2000.
10. ICANNGA 2001, *International Conference on Artificial Neural Networks and Genetic Algorithms*, Prague, Czech Republic, April 22–25, 2001, (Programme Committee).
11. *First joint Israel-Greece workshop on the Mathematics of Geometric Modeling*, National Technical University of Athens, Athens, Greece, October 11–12, 2001, (Scientific Committee).
12. *Workshop on Approximation Theory*, Tel-Aviv, February 20–21, 2002.
13. *Conference in Analysis*, Technion, May 23–28, 2002.
14. *Curves and Surfaces*, St. Malo, France, June 27–July 3, 2002, (Scientific Committee).
15. Workshop on Approximation Theory within framework of *FoCM Conference*, Minnesota, August 5–14, 2002.
16. *The Second International Symposium on Computing Science*, Guangzhou, China, December 20–23, 2002 (Scientific Committee).
17. ICANNGA 2003, *International Conference on Artificial Neural Networks and Genetic Algorithms*, Roanne, France, April 23–25, 2003, (Programme Committee).
18. *Third International Conference on Multivariate Approximation: Theory and Applications*, Cancun, Mexico April 24–29, 2003, (Scientific Committee).
19. *2003 Annual Meeting of the Israel Mathematical Union*, Zichron Ya'acov, May 8–9, 2003.
20. *Constructive Mathematics: A meeting honoring Carl de Boor*, Schloss Dagstuhl, Germany, May 26–30, 2003, (Programme Committee).
21. *3rd Joint Cyprus-Israel Mathematics Workshop*, Nicosia, Cyprus, June 5–7, 2003.
22. *Victoria International Conference 2004*, Wellington, New Zealand, February 9–13, 2004.

23. *2004 Annual Meeting of the Israel Mathematical Union*, Kibbutz Shefayim, May 6–7, 2004.
24. *Constructive Theory of Functions*, Campos do Jordó, Brazil, June 3–9, 2008, (Scientific Committee).
25. *Constructive Theory of Functions*, to commemorate Borislav Bojanov, Sozopol, Bulgaria, June 3–10, 2010, (Scientific Committee).
26. *Computational Complex Analysis and Approximation Theory*, in honor of Professor Nicolas Papamichael, Protaras, Cyprus, 5–11 June 2011, (Scientific Committee).
27. *Israeli-Polish Mathematical Meeting*, Lodz, Poland, September 11–15, 2011, (Scientific Committee) + organizer of section “Approximation and Complexity”.
28. *Approximation Theory and Fourier Analysis*, December, 2011. Barcelona, Spain (Scientific Committee).
29. *New Trends in Approximation Theory*, January 4–7, 2012, Ein-Gedi, Israel (Scientific Committee).
30. *Approximation Theory and its Applications*, May 28–June 3, 2012, Kamianets-Podilskyi, Ukraine (Programme Committee).
31. *The International Conference on Actual Problems of Mathematics and Informatics*, Baku, Azerbaijan, May 29–31, 2013 (Program Committee).
32. *XII International Conference Approximation and Optimization in the Caribbean*, Havana, Cuba, June 5–10, 2016 (Scientific Committee).
33. *Theory of Approximation of Functions and its Applications*, May 28–June 3, 2017, Slovyansk, Ukraine (Program Committee).

Other Projects

1. Joint founder (with Carl de Boor) and manager of AT-NET (Approximation Theory Network), an electronic mail network for researchers in Approximation Theory, 1992–1996
2. Development (with Carl de Boor) of homepage on the History of Approximation Theory, see <http://www.math.technion.ac.il/hat/>
3. Fourier Series and Integral Transforms, taped lectures in Hebrew from 1996, at the Audio-Visual library of the Technion and on YouTube.

Technion Administrative Duties, excluding Departmental Committees

1. Director, Institute of Advanced Studies in Mathematics in the Technion (1988–89) and (1992–94).
2. Dean, Faculty of Mathematics, 1.1.1996–31.12.1997.
3. Technion Promotions Committee (Vaada Mechina Senati), 1.1999–3.2000.
4. Chairman of Professional Committees (Yor Vaadot Miktzoeot), 1.2001–12.2002.
5. Harvey Prize Committee, 2001.
6. Technion Appointment Committee in Research Agency (Vaadat Minuim BeReshut HaMechkar), 1.2002–12.2003.
7. Technion Honorary Doctorate Committee (Vaadat Mechina LeToarei Kavod), 1.2002–12.2003.
8. Dean of Undergraduate Studies, 1.1.2005–31.07.2008.
9. Interdepartmental Committee of Applied Sciences (Technion-Cornell Innovation Institute), 2012-2014.

Member Outside Committees

1. Vasil A. Popov Prize in Approximation Theory. (International prize awarded once every 3 years to best young researcher in Approximation Theory.) 1994, 1997, 2000, 2003, 2006, 2009, 2012.
2. Selection (Appointment) Committee at University of Cyprus in 1997, 1999, 2008.
3. Israeli Delegate to the Council of the European Mathematics Society, 2001.
4. Wolf Prize, Mathematics, 2001, 2003.
4. FoCM. In charge of publications and on Board of Directors, 2002–2014.
5. President of Israel Mathematical Union, 2003–2004.

Graduate Students

1. Rachel Gartenberg, M. Sc., 1982. (Primary supervisor, Dr. Zeev Ritter; Internal Supervisor, A. Pinkus.)
2. Dvora Nir, M. Sc., 1985. *Extremal Problems in Approximation Theory*.
3. Berta Azar, M. Sc., 1992 – 1994. Studies terminated.
4. Maxim Geifman, M. Sc., 2004 – 2009. *Harmonic Analysis and Approximation by Ridge Functions* (Joint supervisor: Vitaly Maiorov).

Post-Doctoral Students

1. Ed Nadler, Sept. 1985 – Aug. 1987.
2. Shayne Waldron, Sept. 1995 – Aug. 1997.
3. Vugar Ismailov, INTAS Young Scientist Fellowship, April 2007 – June 2007, April 2008 – June 2008.