

Curriculum Vitae
Arcadii Z. Grinshpan

SCHOOL ADDRESS:

University of South Florida, Arts & Sciences: Mathematics & Statistics
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PERSONAL AND CONTACT INFORMATION:

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EDUCATIONAL EXPERIENCE:

Year	Degree	Major	Institution
1973	Ph.D.	Mathematics	St. Petersburg & Donetsk State Universities
1969	Diploma in Math.	with Distinction	St. Petersburg State University

ACADEMIC AND PROFESSIONAL EXPERIENCE:

Year	Academic Title/Position	Institution
2010-present	Director of the Center for Industrial and Interdisciplinary Mathematics, www.ciim.usf.edu	University of South Florida
2008-present	Scholar/Scientist/Engineer	_____ " _____
2000-2010	Director of Industrial Mathematics Program	_____ " _____
1995-2000	Industrial Mathematics Coordinator	_____ " _____
1992-2000	Vis. Professor/Adj. Professor	_____ " _____
1991-2005	Leading Researcher/Consultant: on leave	Research Ctr for Interdisc. Env. Coop., Russian Acad. of Sci. (St. Petersburg)
1976-91	Sr. Researcher, Math. Modeling Group Ldr	Sci. & Prod. Inst. for Fuel Systems
1969-76	Jr. Researcher, Math. Modeling Group	of Engines (St. Petersburg)

Service - Professional, Community, University:

Year	Program/Association/Journal	Role
1999-present	Mathematics Umbrella Group at USF	Director
2008-present	Undergraduate Journal of Mathematical Modeling: One + Two	Editor

Grants: DUE 0756847 NSF \$1,999,754.00 (08/2008-07/2013) Co-PI,
Innovative Learning-Centered Grant USF \$10,000.00 (03/2009-06/2010) PI

Research Interests:

Complex Analysis, Inequalities, Mathematical Modeling, Numerical Analysis, Special Functions

PUBLICATIONS

1. Grinshpan, Arcadii Z. "Volterra convolution equations: solution - kernel connection." *Integral Transforms Spec. Funct.* (2011/12): in press.
2. Abramovich, Sergei, and Arcadii Z. Grinshpan. "Bridging K-12 and university mathematics: building the staircase from the top." *IMVI: Open Mathematical Education Notes 2* (2012): 1-21.
3. Grinshpan, Arcadii Z. "Weighted inequalities and negative binomials." *Adv. in Appl. Math.* 45:4 (2010): 564-606.
4. Grinshpan, Arcadii Z. "A family of integral equations with restricted solutions." *Integral Transforms Spec. Funct.* 20:10 (2009): 723-735.
5. Grinshpan, Arcadii Z. "Inequalities for classical orthogonal polynomials." *AJSE - Mathematics* 1:1 (2009): 83-94.
6. Abramovich, Sergei, and Arcadii Z. Grinshpan. "Teaching mathematics to non-mathematics majors through applications." *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies* 18:5 (2008): 411-428.
7. Grinshpan, Arcadii Z. "Weighted integral and integro-differential inequalities." *Adv. in Appl. Math.* 41:2 (2008): 227-246.
8. Grinshpan, Arcadii Z. "An integral recursive inequality and applications." *The Ramanujan Journal* 15:2 (2008): 187-196.
9. Grinshpan, Arcadii Z. "Inequalities for formal power series and entire functions." *J. Math. Anal. Appl.* 338:2 (2008): 1418-1430.
10. Grinshpan, Arcadii Z. "Weighted norm inequalities for analytic functions." *J. Math. Anal. Appl.* 327:2 (2007): 1095-1104.
11. Alzer, Horst, and Arcadii Z. Grinshpan. "Inequalities for the gamma and q -gamma functions." *J. Approx. Theory* 144:1 (2007): 67-83.
12. Grinshpan, Arcadii Z., and Mourad E. H. Ismail. "Completely monotonic functions involving the gamma and q -gamma functions." *Proc. Amer. Math. Soc.* 134:4 (2006): 1153-1160.
13. Grinshpan, Arcadii Z. "Integral inequalities for some special functions." *J. Math. Anal. Appl.* 314:2 (2006): 724-735.
14. Grinshpan, Arcadii Z., and Anatolii Grinshpan. "A note on de Branges' weights." *Proc. Amer. Math. Soc.* 133:9 (2005): 2605-2608.

15. Grinshpan, Arcadii Z. "General inequalities, consequences and applications."
Adv. in Appl. Math. 34:1 (2005): 71-100.
16. Grinshpan, Arcadii Z. "The Mathematics Umbrella: modeling and education,"
in: *Mathematics in Service to the Community: Concepts and Models for Service-Learning in the Mathematical Sciences*, Ed. Ch. Hadlock. The Mathematical Association of America, *MAA Notes # 66*, Washington DC, 2005, 59-68.
17. Grinshpan, Arcadii Z. "Logarithmic geometry, exponentiation, and coefficient bounds in the theory of univalent functions and nonoverlapping domains,"
in: *Handbook of Complex Analysis: Geometric Function Theory, V. 1*, Ed. R. Kühnau. North-Holland, Amsterdam, 2002, 273-332.
18. Grinshpan, Arcadii Z. "Inequalities generated by the gamma function."
Adv. in Appl. Math. 29:1 (2002): 115-125.
19. Grinshpan, Arcadii Z., Mourad E. H. Ismail, and David L. Milligan. "Complete monotonicity and diesel fuel spray." *Math. Intelligencer* 22:2 (2000): 43-53.
20. Grinshpan, Arcadii Z. "Remarks on the Grunsky norm and p -th root transformation."
J. Comput. Appl. Math. 105:1-2 (1999): 311-315.
21. Grinshpan, Arcadii Z. "The Bieberbach conjecture and Milin's functionals."
Amer. Math. Monthly 106:3 (1999): 203-214.
22. Alenitsyn, Yu. E., A. Z. Grinshpan, E. G. Emelyanov, and I. M. Milin. "The Goluzin school of geometric function theory of a complex variable," Part I. *Functional Analysis (Ulyanovsk)* 37 (1999): 3-14 (Russian).
23. Alenitsyn, Yu. E., A. Z. Grinshpan, E. G. Emelyanov, and I. M. Milin. "The Goluzin school of geometric function theory of a complex variable," Part II. *Functional Analysis (Ulyanovsk)* 37 (1999): 15-28 (Russian).
24. Grinshpan, Arcadii Z. "On some formal and regular identities."
Ann. Univ. Mariae Curie-Sklodowska Sect. A 52:1 (1998): 35-41.
25. Grinshpan, Arcadii Z. "On the Goodman conjecture and related functions of several complex variables." *Algebra i Analiz* 9:3 (1997): 198-204; *St. Petersburg Math. Journal* 9:3 (1998): 595-600.
26. Grinshpan, A. Z., and Ch. Pommerenke. "The Grunsky norm and some coefficient estimates for bounded functions." *Bull. London Math. Soc.* 29:6 (1997): 705-712.

27. Grinshpan, A. Z., and E. B. Saff. "Estimating the argument of some analytic functions." *J. Approx. Theory* 88:1 (1997): 135-138.
28. Grinshpan, A. Z., and Ch. Pommerenke. "The Grunsky operator and coefficient differences." *Complex Variables: Theory Appl.* 33:1-4 (1997): 113-127.
29. Grinshpan, Arcadii Z. "A. W. Goodman: Research mathematician and educator." *Complex Variables: Theory Appl.* 33:1-4 (1997): 1-26.
30. Grinshpan, Arcadii Z. "Hausdorff's moment sequences and exponential convolutions." *Methods and Applications of Analysis* 3:1 (1996): 31-45.
31. Grinshpan, Arcadii Z., and Mourad E.H. Ismail. "On a parametric diesel function." *C. R. Math. Rep. Acad. Sci. Canada* 18:1 (1996): 53-58.
32. Grinshpan, Arcadii Z. "On an identity related to multivalent functions." *Proc. Amer. Math. Soc.* 123:4 (1995): 1199-1205.
33. Grinshpan, A. Z., and E. B. Saff. "Estimating the argument of approximate conformal mappings." *Complex Variables: Theory Appl.* 26:3 (1994): 191-202.
34. Grinshpan, Arcadii Z. "Advanced coefficient problems for univalent functions," in: *Linear and Complex Analysis, Problem Book 3, Part 2*, Ed. V. P. Havin and N. K. Nikolski. Springer, Berlin, 1994, 397-400.
35. Aleksandrov, I. A., Yu. E. Alenitsyn, V. I. Belyi, V. V. Goryainov, A. Z. Grinshpan, V. Ya. Gutlyanskii, S. L. Krushkal, N. M. Matveev, V. I. Milin, I. P. Mityuk, S. V. Nikitin, V. P. Odinets, Yu. G. Reshetnyak, P. M. Tamrazov, and N. A. Shirokov. "Isaak Moiseevich Milin (Obituary)." *Uspekhi Mat. Nauk* 48:4 (1993): 167-168 (Russian); English transl. *Russian Math. Surveys* 48:4 (1993): 181-183.
36. Grinshpan, Arcadii Z., and Sergey V. Belyi. "The system theory approach to some engineering problems." *SAE Technical Paper Series* **932460** (1993): 1-7.
37. Grinshpan, Arcadii Z. "The use of parameterization for modeling diesel fuel spray." *SAE Technical Paper Series* **921728** (1992): 1-6.
38. Grinshpan, A. Z. "Univalent functions with logarithmic restrictions" *Ann. Polon. Math.* 55 (1991): 117-138.
39. Grinshpan, Arcadii Z., and I. M. Milin. "Simply-connected domains with finite logarithmic area and Riemann mapping functions," in: *Constantin Caratheodory: An International Tribute*, Ed. Th. Rassias. World Scientific Publ. Co., Singapore, 1991, 381-403.

40. Grinshpan, Arcadii Z., and Stanislav A. Romanov. "Improvement of diesel engine performance through fuel-injection equipment optimization." *SAE Technical Paper Series* **911820** (1991): 1-16.
41. Grinshpan, Arcadii Z. "Exponentiation method for univalent functions," in: *Theory of Functions and Approximations*, Part 2, Ed. S. M. Nikolskii. Saratov Univ., Saratov, 1990, 72-74 (Russian).
42. Grinshpan, A. Z., and S. A. Romanov. "Injection parameter optimization and calculation of the main design elements of diesel fuel-injection equipment." *Dvigatelistroenie* 130:10 (1989): 18-21 (Russian, English synopsis).
43. Aleksandrov, I. A., Yu. E. Alenitsyn, A. Z. Grinshpan, V. Ya. Gutlyanskii, S. L. Krushkal, and P. M. Tamrazov. "Isaak Moiseevich Milin (on his 70-th birthday)." *Uspekhi Mat. Nauk* 44:5 (1989): 191-192 (Russian); English transl. *Russian Math. Surveys* 44:5 (1989) 231-232.
44. Grinshpan, A. Z., and S. A. Romanov. "Calculations of characteristics of fuel-injection pump cam profile." *Dvigatelistroenie* 110:2 (1988): 10-13 (Russian, English synopsis).
45. Milin, I. M., and A. Z. Grinshpan. "Logarithmic coefficients means of univalent functions." *Complex Variables Theory Appl.* 7:1-3 (1986): 139-147.
46. Grinshpan, A. Z. "Univalent functions and regularly measurable mappings." *Sibirsk. Mat. Zh.* 27:6 (1986): 50-64 (Russian); English transl. *Siberian Math. J.* 27:6 (1986): 825-837.
47. Grinshpan, A. Z., and S. A. Romanov. "Computer program for automated analysis of the injection parameter effect on diesel operation." *Trudy CNITA* 85 (1985): 167-173 (Russian).
48. Grinshpan, A. Z. "Coefficient inequalities for conformal mappings with homeomorphic extension." *Sibirsk. Mat. Zh.* 26:1 (1985): 49-65 (Russian); English transl. *Siberian Math. J.* 26:1 (1985): 37-50.
49. Grinshpan, A. Z. "On the power stability for the Bieberbach inequality." *Analytic number theory and the theory of functions, 5. Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 125 (1983): 58-64 (Russian); English transl. *Journal of Soviet Mathematics* 26 (1984): 2338-2342.
50. Grinshpan, A. Z. "On the growth of coefficients of univalent functions with a quasiconformal extension." *Sibirsk. Mat. Zh.* 23:2 (1982): 208-211 (Russian).
51. Grinshpan, Arcadii Z. "Mutual growth of adjacent coefficients of powers of univalent functions," in: *Theory of Mappings, its Generalizations and Applications*, Ed. G. D. Suvorov. Naukova Dumka, Kiev, 1982, 64-67 (Russian).

52. Grinshpan, A. Z. "Coefficients of powers of univalent functions." *Sibirsk. Mat. Zh.* 22:4 (1981): 88-93 (Russian); English transl. *Siberian Math. J.* 22:4 (1981): 551-554.
53. Grinshpan, A. Z., S. A. Romanov, and Yu. B. Sviridov. "Determination of fuel injection conditions in diesel engines on the basis of some known mixture formation parameters." *Trudy CNITA* 75 (1980): 3-11 (Russian).
54. Grinshpan, Arcadii Z. "On the Taylor coefficients of certain classes of univalent functions," in: *Metric Problems in Function Theory*, Ed. G. D. Suvorov. Naukova Dumka, Kiev, 1980, 28-32 (Russian).
55. Grinshpan, A. Z., and Z. D. Kolomoitseva. "The method of areas for functions without common values." *Vestnik Leningrad. Univ.* 19:4 (1979): 31-36 (Russian, English summary); English transl. *Vestnik Leningrad Univ. Math.* 12:4 (1980): 272-279.
56. Grinshpan, Arcadii Z., S. A. Romanov and Yu. B. Sviridov. "On development of a method of comparative evaluation of effectiveness of fuel-injection characteristics of diesel engines," in: *Some Methods of Increasing Fuel Economy and Decreasing Toxicity of Autotractor Engines*, Ed. S. G. Roganov. AzerPI, Baku, 1979, 4-5 (Russian). Details are given in *CNITA Technico-Scientific Reports*, 1977-79 (Russian).
57. Grinshpan, A. Z., S. A. Romanov, and Yu. B. Sviridov. "Injection characteristic determination on the basis of a predetermined rule of a fuel spray length variation." *Trudy CNITA* 72 (1978): 11-16 (Russian).
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59. Sviridov, Yu. B., S. A. Romanov, and A. Z. Grinshpan. "Mathematical model and calculation method for diesel fuel spray," in: *Processes of Functioning in Engines*. MADI, Moscow, 1978, 84-85 (Russian). Details are given in *CNITA Technico-Scientific Reports*, 1975-78 (Russian).
60. Grinshpan, A. Z., S. A. Romanov, and Yu. B. Sviridov. "Calculations of evaporated diesel fuel spray." *Trudy CNITA* 69 (1977): 3-11 (Russian).
61. Grinshpan, A. Z. "The sharpening of the difference of the moduli of adjacent coefficients of univalent functions," in: *Some Problems in Modern Function Theory*, Ed. P. P. Belinskii. Inst. Mat. Sibirsk. Otdel. Akad. Nauk SSSR, Novosibirsk, 1976, 41-45 (Russian).
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63. Grinshpan, A. Z., and S. A. Romanov. "Computer calculations of fuel droplet evaporation." *Trudy CNITA* 68 (1976): 11-16 (Russian).
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65. Grinshpan, A. Z., S. A. Romanov, and Yu. B. Sviridov. "Analytic model of liquid fuel spray penetration in a stationary gas atmosphere." *Trudy CNITA* 64 (1975): 17-23 (Russian).
66. Grinshpan, A. Z., and Z. D. Kolomoitseva. "Certain estimates in the class of functions that do not take on any pair of values w and $-w$." *Vestnik Leningrad. Univ.* 19:4 (1973): 28-34 (Russian, English summary); English transl. *Vestnik Leningrad Univ. Math.* 6:4 (1979): 331-338.
67. Grinshpan, A. Z. "Logarithmic coefficients of functions of class S ." *Sibirsk. Mat. Zh.* 13 (1972): 1145-1157 (Russian); English transl. *Siberian Math. J.* 13 (1972): 793-801.
68. Grinshpan, A. Z. "An application of the principle of areas to Bieberbach-Eilenberg functions." *Mat. Zametki* 11 (1972): 609-618 (Russian); English transl. *Math. Notes* 11 (1972): 371-377.
69. Grinshpan, A. Z. "The coefficients of univalent functions that do not assume any pair of values w and $-w$." *Mat. Zametki* 11 (1972): 3-14 (Russian); English transl. *Math. Notes* 11 (1972): 3-11.
70. Two lemmas on convex polyhedra, in: *Convex Polyhedra with Regular Faces* by V. A. Zalgaller. *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov (LOMI)* 2 (1967) (Russian): 70-72 (B. Belinskii, A. Grinshpan) and 78-79 (A. Grinshpan); English transl. *Seminars in Mathematics, V. A. Steklov Mathematical Institute, Leningrad*, Vol. 2, Consultants Bureau, New York, 1969.
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SPECIAL ISSUE

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Selected Presentations

1. Grinshpan, Arcadii Z. "Volterra convolution equations, power series modifications, and related inequalities." AMS Meeting (Georgia Southern University, Statesboro, 2011).
2. Grinshpan, Arcadii Z. "Convolutions and integro-differential inequalities." International Conference on Differential Equations and Dynamical Systems (University of South Florida, Tampa, 2010).
3. Grinshpan, Arcadii Z. "Weighted seminorm inequalities for power series." Analysis Seminar (Drexel University, Philadelphia, 2010).
4. Grinshpan, Arcadii Z. "A seminorm inequality and applications." SEAM XXV (University of South Florida, Tampa, 2009).
5. Abramovich, Sergei, and Arcadii Z. Grinshpan. "Teaching mathematics through applications to non-mathematics majors across disciplines: an apprenticeship approach." International Congress on Mathematical Education (Copenhagen, Denmark, 2004).
6. Grinshpan, Arcadii Z. "Integral inequalities and applications." Analysis Seminar (UC Berkeley, 2004).
7. Grinshpan, Arcadii Z. "New general inequalities and a positive kernel." Day of Function Theory in Germany and International Conference on Geometric Function Theory dedicated to Herbert Grötzsch (1902-1993) (Martin-Luther-University, Halle (Saale), Germany, 2002).
8. Grinshpan, Arcadii Z. "Inequalities generated by the gamma function." Analysis Seminar (UC Berkeley, 2001).
9. Grinshpan, Arcadii Z. "A mix of pure and applied ideas." MAA, Florida Section (University of South Florida, Tampa, 1999).
10. Grinshpan, Arcadii Z. "Quasiconformal extendibility and the Grunsky norm." Summer Meeting in Mathematical Analysis (Russian Academy of Sciences, Euler Mathematical Institute, St. Petersburg, Russia, 1999).
11. Grinshpan, Arcadii Z. "On one famous problem." MAA, Florida Section (Eckerd College, St. Petersburg, Florida, 1997).
12. Grinshpan, Arcadii Z. "Some estimates for bounded functions." Conference on Continued Fractions and Geometric Function Theory (Norwegian University of Science and Technology, Trondheim, Norway, 1997).

13. Grinshpan, Arcadii Z. “The Grunsky operator and coefficients of univalent functions.”
Conference on Conformal and Quasiconformal Mappings
(Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach, Germany, 1996).
14. Grinshpan, Arcadii Z., and Mourad E. H. Ismail.
“On a sequence of polynomials related to the Bieberbach–Milin problem.”
Joint Mathematics Meeting, AMS and MAA (Orlando, Florida, 1996).
15. Grinshpan, Arcadii Z. “Exponential convolutions and q -functions.”
Conference on Special Functions, q -Series and Related Topics
(The Fields Institute for Research in Mathematical Sciences and University of Toronto,
Toronto, Ontario, Canada, 1995).
16. Grinshpan, Arcadii Z., and Sergei V. Belyi.
“The system theory approach to some engineering problems.”
Off-Highway and Power Plant Congress
(SAE–International Engineering Society, Milwaukee, Wisconsin, 1993).
17. Grinshpan, Arcadii Z., and Stanislav A. Romanov.
“Improvement of diesel engine performance through fuel injection equipment optimization.”
Off-Highway and Power Plant Congress
(SAE–International Engineering Society, Milwaukee, Wisconsin, 1991).
18. Grinshpan, A. Z. “Univalent functions with logarithmic restrictions.”
International Conference on Analytic Functions
(Institute of Mathematics, Jagiellonian University, Szczyrk, Poland, 1990).
19. Grinshpan, A.Z. “The exponentiation method and its applications.”
Conference on Geometric Function Theory
(Mathematical Institute, Novosibirsk, Russia, 1988).