CURRICULUM VITAE

Mau-Hsiang Shih

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Education

B.S., Chung Yuan Christian University, 1970, June

M.S., National Central University, 1976, June

Ph.D., Hokkaido University, 1982, February

Research Fields

Interneural computing, nonlinear dynamics

Academic Employments

Chung Yuan Christian University, Instructor, August 1, 1976–July 31, 1979

Chung Yuan Christian University, Associate Professor, August 1, 1979–July 31, 1982

Chung Yuan Christian University, Professor, August 1, 1982–July 31, 2000

National Taiwan Normal University, Professor, August 1, 2000–January 31, 2015

National Taiwan Normal University, Distinguished Professor, January 1, 2014–January 31, 2015

Tokyo Institute of Technology, Visiting Professor, October 1, 2007–March 31, 2008

China Medical University, Chair Professor, February 1, 2015– present

Editorial Board

Taiwanese Journal of Mathematics

Nonlinear and Convex Analysis

Advances in Nonlinear Analysis and Applications

Mathematics Applied in Science and Technology

International Journal of Computational and Applied Mathematics

Honors

Research Professor Award, 1984, Ministry of Education

Distinguished Teaching Award, 1990, Ministry of Education

Sun Yat-Sen Academic Prize, 1990

Distinguished Research Professor, 1995, Chung Yuan Christian University

Elsevier, Advances in Applied Mathematics, Top Cited Article 2005-2010,

Awarded to: Shih, M.-H., Dong, J.-L., For the paper entitled:

"A combinatorial analogue of the Jacobian problem in automata networks."

Publications

1. M.-P. Chen and M.-H. Shih, *Fixed point theorems for point-to-point and point-to-set maps*, J. Math. Anal. Appl., 71 (1979), 516–524.

2. M.-H. Shih, *Fixed points for mappings majorized by real functionals*, Hokkaido Math. J., 9 (1980), 18–35.

3. M.-H. Shih, *Bolzano's theorem in several complex variables*, Proc. Amer. Math. Soc., 79 (1980), 32–34.

4. M.-H. Shih, *Rouche's and related theorems for analytic functions of several complex variables*, Bull. Institute of Mathematics, Academia Sinica, 8 (1980), 527–533.

5. M.-H. Shih, *Location of the zeros of continuously differentiable maps*, Bull. London Math. Soc., 13 (1981), 214–218.

6. M.-H. Shih, *A further generalization of the Ostrousk theorem in Banach space*, Proc. Japan Academy, 57 (1981), 168–170.

7. M.-H. Shih, *Leray-Schauder's theorem for analytic functions of several complex variables*, Hokkaido Math. J., 10 (1981), 659–666.

8. M.-H. Shih and C.-C. Yeh, *Successive approximation in complex analysis*, J. Math. Anal. Appl., 13 (1981), 214–218.

9. M.-H. Shih, *An analog of Bolzano's theorem for functions of a complex variable*, Amer. Math. Monthly, 89 (1982), 210–211.

10. M.-H. Shih and C.-C. Yeh, *On fixed point theorems of contractive type*, Proc. Amer. Math. Soc., 85 (1982), 465–468.

11. M.-H. Shih and H.-T. Wang, *Unit lemniscates contained in the unit ball*, Proc. Amer. Math. Soc., 86 (1982), 451–454.

12. M.-H. Shih and K.-K. Tan, *A further generalization of Ky Fan's minimax inequality and its applications*, Studia Math., 58 (1984), 279–287.

13. M.-H. Shih and K.-K. Tan, *Analytic functions of topological contractions*, Math. Zeitschrift, 187 (1984), 317–323.

14. M.-H. Shih and K.-K. Tan, *Generalized quasi-variational inequalities in locally convex topological vector spaces*, J. Math. Appl., 108 (1985), 333–343.

15. M.-H. Shih and K.-K. Tan, *Non-compact sets with convex sections*, Pacific J. Math., 119 (1985), 473–479.

16. M.-H. Shih and K.-K. Tan, *Non-compact sets with convex sections II*, J. Math. Anal. Appl., 119 (1985), 473–479.

17. M.-H. Shih, *Convering properties of convex sets*, Bull. London Math. Soc., 18 (1986), 57–59.

18. M.-H. Shih, *On certain matching properties of convex sets*, Bull. London Math. Soc., 18 (1986), 192–194.

19. M.-H. Shih and K.-K. Tan, *Covering theorems of simplexes and systems of linear inequalities*, Linear and Multilinear Algebra, 19 (1986), 309–320.

20. M.-H. Shih and K.-K. Tan, *Minimax inequalities and applications*, Contemporary Math. Amer. Math. Soc., 54 (1986), 45–63.

21. M.-H. Shih and K.-K. Tan, *Covering theorems of convex sets related to fixed point theorems*, Nonlinear and Convex Analysis, Proceedings in honor of Ky Fan, Edited by B.-L. Lin and S. Simons, Marcel Dekker Inc., 107 (1987), 235–244.

22. M.-H. Shih and K.-K. Tan, *Shapley selections and covering theorems of simplexes*, Nonlinear and Convex Analysis, Proceedings in honor of Ky Fan, Edited by B.-L. Lin and S. Simons, Marcel Dekker Inc., 107 (1987), 245–251.

23. M.-H. Shih, *Similarity of a linear strict set-contraction and the radius of the essential spectrum*, Proc. Amer. Math. Soc., 100 (1987), 137–139.

24. M.-H. Shih and K.-K. Tan, *Browder-Hartman-Stampacchia variational inequalities for multi-valued monotone operators*, J. Math. Anal. Appl., 134 (1988), 431–440.

25. M.-H. Shih and K.-K. Tan, *Generalized bi-quasi-variational inequalities*, J. Math. Anal. Appl., 143 (1989), 66–85.

26. M.-H. Shih, *An aspect of fixed point theory*, In Y.-C. Wong's Book: Introductory Theory of Topological Vector Spaces, 353–377, Marcel Dekker Inc., 1992.

27. S.-N. Lee and M.-H. Shih, *A volume problem for an n-dimensional ellipsoid intersecting with a hyperplane*, Linear Algebra and Its Applications, 132 (1990), 93–102.

28. M.-H. Shih and S.-N. Lee, *A combinatorial Lefschetz fixed point formula*, J. Combinatorial Theory Ser. A, 60 (1992), 123–129.

29. M.-H. Shih and S.-N. Lee, *Combinatorial formulae for multiple set-valued labellings*, Math. Ann., 296 (1993), 35–61.

30. M.-H. Shih and J.-W. Wu, *Question of global asymptotic stability in state-varying nonlinear systems*, Proc. Amer. Math. Soc., 122 (1994), 801–804.

31. M.-H. Shih and J.-W. Wu, *Two results on spectral radius, with applications to instability*, Linear Algebra and Its Applications, 222 (1995), 147–153.

32. M.-H. Shih and J.-W. Wu, *Strong instability for a plane autonomous syatem*, Bull. Institute of Mathematics, Academia Sinica, 23 (1995), 197–202.

33. M.-H. Shih and C.-T. Pang, *Asymptotic stability and generalized Gelfand spectral radius formula*, Linear Algebra and Its Applications, 252 (1997), 61–70.

34. M.-H. Shih and Y.-Y. Lu, *An inequality for the spectral radius of an interval matrix*, Linear Algebra and Its Applications, 274 (1998), 27–36.

35. M.-H. Shih and J.-W. Wu, *On a discrete version of Jacobian conjecture of dynamical systems*, Nonlinear Analysis, 34 (1998), 779–789.

36. M.-H. Shih and S.-N. Lee, *A counting lemma and multiple combinatorial Stokes' theorem*, Europ. J. Combinatorics, 19 (1998), 969–979.

37. T, Ando and M.-H. Shih, *Simultaneous contractibility*, SIAM J. Matrix Anal. Appl., 19 (1998), 487–498.

38. M.-H. Shih and J.-W. Wu, *Asymptotic stability in the Schauder fixed point theorem*, Studia Math., 131 (1998), 143–148.

39. M.-H. Shih, *Simultaneous Schur stability*, Linear Algebra and Its Applications, 287 (1999), 323–336.

40. M.-H. Shih and J.-L. Ho, *Solution of Boolean Markus-Yamabe problem*, Advances in Applied Math., 22 (1999), 60–102.

41. M.-H. Shih and K.-K. Tan, *On topological linear contractions*, Chinese Ann. of Math., 2 (1999), 159–168.

42. M.-H. Shih, *Koing chains for compact matrix sets*, Linear Algebra and Its Applications, 330 (2001), 205–208.

43. Y.-C. Li and M.-H. Shih, *Contractibility of compact contractions in Hilbert space*, Linear Algebra and Its Applications, 341 (2002), 369–378.

44. M.-H. Shih, *Dynamics of neural networks*, Research Institute for Mathematical Sciences, Kyoto University, Kokyuroku, 1298 (2002), 88–96.

45. S.-N. Lee and M.-H. Shih, *Sperner matroid and Sperner map*, Research Institute for Mathematical Sciences, Kyoto University, Kokyuroku, 1298 (2002), 161–164.

46. S.-N. Lee and M.-H. Shih, *Sperner matroid*, Archiv der Mathematik, 81 (2003), 103–112.

47. Y.-C. Li and M.-H. Shih, *The length problem of contractibility of compact contractions in Hilbert space*, Research Institute for Mathematical Sciences, Kyoto University, Kokyuroku, 1365 (2003), 138–145.

48. M.-H. Shih, *Jacobian problem and genetic network*, Research Institute for Mathematical Sciences, Kyoto University, Kokyuroku, 1415 (2005), 79–82.

49. M.-H. Shih and J.-L. Dong, *A combinatorial analogue of the Jacobian problem in automata networks*, Advances in Applied Math., 34 (2005), 30–46.

50. S.-N. Lee and M.-H. Shih, *A structural theorem for coupled balanced games without side payments*, Research Institute for Mathematical Sciences, Kyoto University, Kokyuroku, 1484 (2006), 69–72.

51. S.-N. Lee and M.-H. Shih, *Retrieval of Sperner map from Sperner matroid*, Taiwanese J. Math., 10 (2006), 181–185.

52. Y.-A. Hwang and M.-H. Shih, *Equilibrium on a market game*, Economic Theory, 31 (2007), 387–392.

53. Y.-C. Li and M.-H. Shih, *The normed finiteness property of compact contraction operators*, Linear Algebra and Its applications, 428 (2008), 2319-2323.

54. M.-H. Shih and C.-T. Pang, *Simultaneous Schur stability of interval matrices*, Automatica, 44 (2008), 2621–2627.

55. C.-H. Chen, S.-N. Lee, and M. H. Shih, *Combinatorial structures of pseudomanifolds and matroids*, Taiwanese J. Math., 12 (2008), 1313–1334.

56. M.-H. Shih and W. Takahashi, *A representation theorem for norms in Hilbert space*, Taiwanese J. Math., 12 (2008), 2137–2140.

57. S.-N. Lee and M. H. Shih, *Octahedral projection*, Research Institute for Mathematical Sciences, Kyoto University, Kokyuroku, 1611 (2008), 134–141.

58. M.-H. Shih and F.-S. Tsai, *Growth dynamics of cell assemblies*, SIAM J. Appl. Math., 69 (2009), 1110–1161.

59. C.-H. Chen, S.-N. Lee, and M. H. Shih, *Multiple combinatorial Stokes' theorem with balanced structure*, Taiwanese J. Math., 14 (2010), 1169–1200.

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61. S.-Y. Hsu and M.-H. Shih, *A proof of Fritz John's ellipsoid theorem*, J. Nonlinear and Convex Analysis, 12 (2011), 1–4.

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64. S.-Y. Hsu and M.-H. Shih, *Strict diagonal dominance in asymptotic stability of general equilibrium*, Fixed Point Theory Appl., 2013 (2013), 225–231.

65. M.-H. Shih and F.-S. Tsai, *Neural network dynamics without minimizing energy*, Abstract and Applied Analysis, 2013 (2013), Article ID 496217, 4 pages.

66. M.-H. Shih and W. Takahashi, *Positive stochastic matrices as contraction maps*, J. Nonlinear and Convex Analysis, 14 (2013), 649–651.

67. M.-H. Shih and F.-S. Tsai, *Operator control of interneural computing machines*, IEEE Trans. Neural Netw. Learn. Syst., 24 (2013), 1986–1998.

68. M.-H. Shih and F.-S. Tsai, *Hopfield networks with asymmetric coupling architecture*, J. Nonlinear and Convex Analysis, 5 (2014), 1201–1213.