

Publications:

Ph.D. Thesis:

Li Chen, *lambda-Connectedness and Its Application to Image Segmentation, Recognition, and Reconstruction*, The University of Luton, U.K, July, 2001.

Books:

1. Li Chen, *Discrete Surfaces and Manifolds: A theory of digital-discrete geometry and topology*, 2004. SP Computing.
2. Fong, Ji, Cao, and Chen, *Fuzzy Pattern Recognition*, HeBei Sci&Tech Press 1993. (In Chinese)

Journals:

1. L. Chen_ and B. Fu, Linear and sublinear time algorithms for the basis of abelian groups, Electronic Colloquium on Computational Complexity, Report TR07-052, 2007 (ISSN 1433-8092, 14th Year, 52nd Report, 2007)
2. C-T Lu, Y. Kou, J. Zhao, and L. Chen, Detecting and Tracking Region Outliers in Meteorological Data, *Information Sciences*, Vol 177, pp1609-1632, 2007.
3. Chen, and Paul Wang, Fuzzy Relation Equations (II): The Branch-Point-Solutions and the Categorized Minimal Solutions, *Soft Computing Journal*, Vol 11, No 1, pp33-40, Jan 2007. (published online Mar 2006).
4. G. Agnarsson and Chen, On the extension of vertex maps to graph homomorphisms, *Discrete Mathematics*, Vol 306, No 17, pp 2021-2030, Sept. 2006.
5. Chen and P. Wang, Fuzzy Relation Equations (I): The General and Specialized Solving Algorithms, *Journal of Soft Computing*, Vol 6, 428-435, 2002. (Zbl)
6. Chen, D. Cooley and J. Zhang, Equivalence between two definitions of digital surfaces, *Information Sciences*, Vol 115, 201-220, 1999. (MR, Zbl,)
7. Chen, D. Cooley and J. Zhang, Possibility functions based fuzzy neural networks and their applications to image processing, *IEEE Transaction on Systems, Man, and Cybernetics (B)*, Vol 29, 119-126, Feb. 1999. (This was the theoretical part of my M.S. Thesis.)
8. Chen, H-D Cheng and J. Zhang, Fuzzy subfiber and its application to seismic lithology classification, *Information Sciences: Applications*, Vol.1, No2, 1994. (Zbl)
9. Chen, Random gradually varied surface fitting, *Chinese Science bulletin*, 36:23(1991). (It also has Chinese version. Chinese Science bulletin is one of highest academic Journals in China. It can also be found in the Abstracts of Second SIAM Conference on Geometric Design, 1991.)
10. Chen, The necessary and sufficient condition and the efficient algorithms for gradually varied fill, *Chinese Science Bulletin*, 35:10(1990). (Zbl, It can also be found in the Abstracts of SIAM Conference on Geometric Design, 1989.)

11. Chen, The lambda-connected segmentation and the optimal algorithm for split-and-merge segmentation, *Chinese J. Computers* 14:5(1991). (Chinese J. Computers is the best journal in computer science in China.) (In Chinese)
12. Chen, The properties and the algorithms for gradually varied fill, *Chinese J. Computers*, 14:3(1991). (In Chinese)
13. D. Liu and Chen, Recognition of three-dimensional digital surfaces, *Journal of Wuhan University (Science Series)*, 1(1990). (In Chinese)
14. Chen, Three-dimensional fuzzy digital topology and its applications (III), *Geophysical Prospecting for Petroleum*, 29:3(1990). (In Chinese)
15. C. Wang, D. Zhou, and Chen, Three-dimensional fuzzy digital topology and its applications (II), *Geophysical Prospecting for Petroleum*, 26:3(1987). (In Chinese)
16. Chen, Complexity analysis of some problem in finite groups, *Chinese J. Computers*, 9:5(1986). (MR) The earlier version is at L. Chen. Algorithms and their complexity analysis for some problems in finite group. *Journal of Sandong Normal University*, in Chinese, 2:27–33, 1984.
17. Chen, An optimal generating algorithm for matrix of equal-weight column and quasiequal-weight row, *Journal of Nanjing Institute of Tech*, 2(1986). (Zbl, In Chinese)
18. Chen, Three-dimensional fuzzy digital topology and its applications (I), *Geophysical Prospecting for petroleum*, 24:2 (1985). (In Chinese)
19. Chen, A Tentative plan for the integrated recognition of lithology and the evaluation of oil and gas, *Geophysical Prospecting for petroleum*, 24:1(1985). (In Chinese)
20. Chen, A note on tEC-MUED systematic code, *Chinese J. Computers*, 7:4(1984). (MR, Soviet Math Abstract) (In Chinese)
21. J. Hong and Chen, An $O(n)$ time algorithm for Abel Group isomorphism, *KeXue TongBao (Chinese Science Bulletin)*, 1985. (In Chinese)
22. Chen, Three dimensional digital topology and surface recognition (Survey paper), *Yi-Chong of Geophysical Prospecting for petroleum*, No 6, 1984. (In Chinese)
23. Chen and Z-Z Zhang, Introducing P=? NP problem, *Communication of Computing Theory*, No 2, 1983. (In Chinese)

Proceedings (with ISBN publishing code):

1. Li Chen, Yongwu Rong, Linear Time Recognition Algorithms for Topological Invariants in 3D, Proceedings of International Conf on Pattern Recognition (ICPR08), 2008.
2. L. Chen, lambda-Connectedness Determination for Image Segmentation, Applied Imagery Pattern Recognition Workshop, 2007. AIPR 2007. 36th IEEE Volume , Issue , 2007,pp 71 – 79

3. Li Chen, Hong Zhu and Wei Cui, Very Fast Region-Connected Segmentation for Spatial Data: Case Study, IEEE conference on System, Man, and Cybernetics, 2006.
4. L. Chen, λ -Measure for Bone Density Connectivity, Proceedings of IEEE International Symposium on Industrial Electronics, 2006 Montréal, Québec, Canada, 489-494, 2006.
5. L. Chen, and O. Adjei .lambda-Connected Segmentation and Fitting, Proceedings of IEEE conference on System, Man, and Cybernetics 2004. 3500- 3506.
6. L. Chen and P.P. Wang, Course Evaluation Using Fuzzified Merrill's Matrix and λ -Connectedness, *Proceedings of seventh Joint Conference on Information Sciences, Duke University*, Sept. 2003. pp 259-262.
7. L. Chen and P.P. Wang, The solution-base matrix and the branch-point solution in fuzzy relation equations, *Proceedings of seventh Joint Conference on Information Sciences, Duke University*, Sept. 2003. pp 72-76.
8. L. Chen, S. Foster, and H. Le, *Concepts Vs. Programming Skills in Java Learning*, Annual Conference of ASEE, 2003.
9. Li Chen, lambda-connected approximations for rough sets, In *Lecture Notes in Computer Science*, Springer, Vol 2457, 572-577, 2002.
10. Li Chen, Some Basic Concepts of Digital Manifolds, *Proc. of The Sixth International conference for Younger Computer Scientists*, pp 388-392, 2001.
11. O. Adjei, L. Chen, H-D Cheng, et al, A Fuzzy Search Method for Rough Sets in Data Mining, *Proceedings of Joint 9th IFSA World Congress and 20th NAFIPS International Conference*, Vancouver, Canada, pp 980-985, 2001.
12. L. Chen, O. Adjei, D. Cooley, lambda-connectedness: Method and Applications, Proc. IEEE Conf on System, Man and Cybernetics 2000, pp 1157-1562, 2000.
13. L. Chen, O. Adjei, Y. Lu, Digital surface reconstruction and oil-gas trap prediction, L. Latecki ed, *Vision Geometry, VX*, SPIE Proc. 4117, pp 176-185, 2000.
14. Chen, Note on the discrete Jordan curve theorem, *Vision Geometry VIII*, Proc. SPIE Vol. 3811, 1999.
15. Chen, D. Cooley, and L. Zhang, An Intelligent data fitting technique for 3D velocity reconstruction, *Application and Science of Computational Intelligence, Proc SPIE Vol 3390*, 1998.
16. Chen, F. Berkey, D. Cooley, Y. He, J. Zhang, and L. Zhang, Intelligent curve tracking algorithms and implementations, in Sadjadi, F., ed, *Automatic Target Recognition VIII*, SPIE Proc. 3371, pp 74-82, 1998.
17. Chen, (alpha, beta)-type digital surfaces and general digital surfaces, R. Melter, A. Wu, and L. Latecki, *Vision Geometry VII*, SPIE Proc. 3454, pp 28-39, 1998.
18. Chen, Point spaces and raster spaces in digital geometry and topology," R. Melter, A. Wu, and L. Latecki, *Vision Geometry VII*, SPIE Proc. 3454, pp 145-155, 1998.

19. Chen, Generalized discrete object tracking algorithms and implementations, *Vision Geometry VI, Proc. SPIE Vol. 3168*, 1997.
20. Chen, D. Cooley and J. Zhang, Possibility function based neural networks: Case study of mathematical analysis, *Application of Fuzzy Logic Technology III*, Proc. SPIE Vol. 2761, 1996.
21. Chen, J. Zhang and D. Cooley, Regular polygons and their application to digital curves, *Vision Geometry V*, Proc. SPIE Vol. 2826, 1996.
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23. Chen, F. Berkey and S. Johnson, The application of a fuzzy object search technique to geophysical data processing, *Proc. of IS&T/SPIE Symposium on Electronic Imaging*, SPIE Proc. Vol. 2180, 1994.
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27. Chen and J. Zhang, Digital surface definition and the fast algorithms for decision and tracking, *Vision Geometry II*, Proc. SPIE Vol. 2060, 1993. (MR)
28. Chen and J. Zhang, Classification of simple digital surface points and a global theorem for simple closed surfaces, *Vision Geometry II*, Proc. SPIE Vol. 2060, 1993. (MR)
29. Chen and J. Zhang, Digital manifolds: An intuitive definition and some properties, In *Proceedings of Second ACM Symp. on Solid Modeling and Applications*, pp 459-460, 1993.
30. J. Zhang, Chen, H-D Cheng, Determination of lithology using instance-based learning, In *Proc. of the International Symp. On Artificial Intelligence*, Monterrey, Mexico, 1993.
31. Chen, Y. Lu et al, Study of Fuzzy Recognition Methods for Geophysical Prospecting Data, *Proc. Annals Meeting of Geophysics of China*, pp 42-43, 1990. (Chinese) (Chen, Y. Lu, et al ``Study of Fuzzy Recognition Methods for Geophysical Prospecting Data," The Report of the 7.5 State Key Projects of China, Index number 75-54-02-08-12.)
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Other Conference Proceedings:

1. L. Chen, Y. Rong, A Fast Algorithm for Homology Groups in 3D Cubical Space, Joint Mathematics Meetings in Washington, DC January 5-8, 2009, Abstracts Vol 30, No 1, 2009.
2. L. Chen, Error-Correction Coding using Combinatorial Representation Matrices, , Joint Mathematics Meetings in Washington, DC January 5-8, 2009, Abstracts Vol 30, No 1, 2009.
3. Li Chen, Hsiao-Code Check Matrices and Recursively Balanced Matrices, SIAM Conference on Discrete Math, 2008.
4. L. Chen, H. Le, and S. Foster, *Java Course Design Using Component Display Theory*, Proceedings of the Symposium on Computing at Minority Institutions, Washington DC, May, 2003, pp 42-48.
5. Chen, D. Cooley, and J. Zhang, Statistical image processing: Principle and algorithms, *Proceedings of Joint Conference of Information Sciences 98*, Vol III, pp 539-542, 1998.
6. D. Cooley and Chen, Intelligent data fitting: A Segmentation based fitting technique, *Proceedings of Joint Conference of Information Sciences 98*, Vol III, pp 535-538, 1998.
7. Chen, and F. Berkey, Neural networks application to the sequential ionogram, *In Proceedings of the International Conference on Fuzzy Theory and Technology*, pp 316-319, 1994.
8. Chen, D. Cooley, and J. Zhang, A new fuzzy classification technique and its application to remote sensing, *In Proceedings of the North American Fuzzy Image Processing Meeting*, pp 144-148, 1993.
9. Chen and L. Zhang, Intelligent data fitting and Reconstruction of 3D interval velocity, *Abstract of International Conference on Industrial and Applied Mathematics*, Washington, D.C., 1991.
10. Chen, Gradually varied surfaces on digital manifold, *Abstract of International Conference on Industrial and Applied Mathematics*, Washington, D.C., 1991.
11. Chen, Matrix representation for some combinatorial problems, *Symp. of Mathematical foundation of Computer Science of China*, 1984. (Most of the conference has no proceedings that time in China. Presenters brought the printed papers to be distributed. This was the major part of my B.S. Dissertation.)