

Publication List of Dr. Wei Li

Books:

1. **Wei Li**: “GRAPHICAL SIMULATION AND COLLISION AVOIDANCE OF ROBOTS”, (Reviewed and edited by Prof. W. Ameilling and Prof. M. Weck, at Technical University Aachen, Germany), (in German), Vieweg-Verlag, Germany, 1992
2. K. Z. He and **Wei Li**: “THE ANALYSIS AND DESIGN OF COMPUTERS FOR CONTROL SYSTEM IMPLEMENTATION”, (In Chinese) Tsinghua University Press, China, 1998

Biological Behavior Based Intelligent Plume Tracing System

Journal Papers:

3. **Wei Li**, J. A. Farrell, R. Carde: “TRACKING OF FLUID-ADVECTED ODOR PLUMES: STRATEGIES INSPIRED BY INSECT ORIENTATION TO PHEROMONE”, *Adaptive Behavior* (in press)
4. J. A. Farrell, J. Murlis, X. Long, **Wei Li**, R. Carde: “FILAMENT-BASED ATMOSPHERIC DISPERSION MODEL TO ACHIEVE SHORT TIME-SCALE STRUCTURE OF ODOR PLUMES”, *Environmental Fluid Mechanics* (in press)
5. J. A. Farrell, S. Pang, **Wei Li**: “PLUME MAPPING VIA HIDDEN MARKOV METHODS”, *IEEE Transactions on Systems, Man and Cybernetics-B*, IEEE Press, USA (in press)

Intelligent Control and System Modeling

Journal Papers:

6. **Wei Li**, X. G. C hang, Jay Farrell and F. Wahl: “DESIGN OF AN ENHANCED HYBRID FUZZY P+ID CONTROLLER FOR A MECHANICAL MANIPULATOR,” *IEEE Transactions on Systems, Man and Cybernetics-B*, IEEE Press, USA (in press)
7. **Wei Li**, X. G. C hang, F. Wahl and Jay Farrell “TRACKING CONTROL OF A MANIPULATOR UNDER UNCERTAINTY BY FUZZY P+I D CONTROLLER”, *Fuzzy Sets and Systems*, vol.122, pp.125-137, 2001, North Holland, ELSEVIER SCIENCE
8. **Wei Li** and X. G. Chang: “APPLICATION OF HYBRID FUZZY LOGIC PROPORTIONAL PLUS CONVENTIONAL INTEGRAL-DERIVATIVE CONTROLLER TO COMBUSTION CONTROL OF STOKER-FIRED BOILERS”, *Fuzzy Sets and Systems*, vol.111, p.267-84, 2000, North Holland, ELSEVIER SCIENCE.

9. **Wei Li**, X. G. Chang, F. M. Wahl and S. K. Tso: "HYBRID FUZZY P+ID CONTROL OF MANIPULATORS UNDER UNCERTAINTY", *Mechatronics*, Vol. 9, pp.301-315, 1999, Pergamon Press, ELSEVIER SCIENCE, UK
10. **Wei Li**: "DESIGN OF A HYBRID FUZZY LOGIC PROPORTIONAL PLUS CONVENTIONAL INTEGRAL-DERIVATIVE CONTROLLER", *IEEE Transactions on Fuzzy Systems*, Vol. 6, No. 4, pp. 449-463, 1998, IEEE Press, USA
11. **Wei Li**: "A METHOD FOR DESIGN OF A HYBRID NEURO-FUZZY CONTROL SYSTEM BASED ON BEHAVIOR MODELLING", *IEEE Transactions on Fuzzy Systems*, Vol.5, No.1, pp.128-137, 1997, IEEE Press, USA
12. **Wei Li** and Q. H. Tan: "BEHAVIOR MODELING BASED HYBRID NEURO-FUZZY CONTROL OF MANIPULATORS," *Aurocon-International Journal on Automation, Robotics and Control*, Vol.1, No.1, pp.16-22, 1996, Germany
13. X.G. Chang; **Wei Li**; F.M Wahl. "EXPERIMENTAL STUDY OF A MECHANICAL MANIPULATOR UNDER UNCERTAINTY BY HYBRID FUZZY P+ID CONTROLLERS." *Control Theory & Applications*, vol.17, (no.1), pp.73-8. 16, 2000.
14. **Wei Li** et al.: "AN AUTOMATIC TUNING FUZZY CONTROLLER FOR MANIPULATORS" *Chinese Journal of Automation* (English Edition), Vol. 9, No. 4, pp. 321-325, 1997
15. Qunhua Tan and **Wei Li**, "BEHAVIOR-BASED NEURAL FUZZY CONTROL METHOD FOR ROBOT", *Journal of Tsinghua University* (in Chinese), Vol. 37, No. 3, p 38-41, 1997
16. **Wei Li**, Q. H Tan, and H. Janocha: "Optimizing Fuzzy Logic Controller Using Nelder and Mead's Simplex Algorithm", *Control Theory and Applications*, Vol.12, No.5, pp.616-622, 1995
17. **Wei Li** and J. Janocha: "An Efficient Fuzzy Control Scheme for Manipulator" *Chinese Journal of Automation* (English Edition), Vol.7, No.3, pp.211-220, 1995

Book Chapter:

18. X. G. Chang, **Wei Li**, J. Z. Zhou and J. Farrell: "DYNAMIC BEHAVIOR MODELING OF STOKER-FIRED BOILERS BY RECURRENT FUZZY-NEURO ETWORKS", *Computational Intelligence for Modelling, Control and Automation*, (Neural Networks & Advanced Control Strategies, edited by M. Mohammadian) pp.190-195, IOS Press, Netherlands, 1999

International Conference Papers:

19. **Wei Li**, X. G. Chang and J. Farrell: "DESIGN OF AN INTELLIGENT CONTROL SYSTEM BASED ON NEURO-FUZZY BEHAVIOR MODELING",

- Proc. of The 5th World Multi-Conference on Systemics, Cybernetics and Informatics SCI*, 2001
20. X.G. Chang, **Wei Li**, J. Farrell: "A C-MEANS CLUSTERING BASED FUZZY MODELING METHOD", *Ninth IEEE International Conference on Fuzzy Systems. FUZZ- IEEE 2000*, San Antonio, TX, USA, 7-10 May 2000.) Piscataway, vol.2, p.937-940, 2000
 21. **Wei Li**, X. G. Chang and F. M. Wahl: "TRACKING CONTROL OF A MANIPULATOR WITH ENHANCEMENT BY FUZZY P+ID CONTROLLER", *Proc. of Fifth Internatioanl Symposium on Methods and Models in Automation and Robotics*, vol. 3, pp.773-779, 1998
 22. **Wei Li**: "DESIGN AND ANALYSIS OF A HYBRID FUZZY LOGIC PROPORTIONAL PLUS CONVENTIONAL INTEGRAL-DERIVATIVE CONTROLLER", *Proc. of the World Multiconference on Systemics, Cybernetics and Informatics*, 1997
 23. **Wei Li** et al.: "DESIGN OF FUZZY LOGIC CONTROLLER FOR COMBUSTION CONTROL OF STOKER-FIRED BOILERS BASED ON BEHAVIOR MODELING", *Proc. of the 1997 IEEE International Conference on Fuzzy Systems*, pp. 453-458, 1997
 24. Qunhua Tan and **Wei Li**, "BEHAVIOR MODELING OF UNCERTAIN DYNAMIC SYSTEMS WITH NONLINEARITY", *Proc. of IEEE Region 10 Annual International Conference*, Vol. 2, p 731-736, 1996
 25. Q. H. Tan, **Wei Li** et al.: "A HYBRID NEURO-FUZZY SYSTEM FOR ROBOT CONTROL", *Proc. of 1995 IEEE International Conference on Systems, Man, and Cybernetics*, Vol. 3, p 2916-2921, 1995
 26. **Wei Li** and Q. H. Tan: "A METHOD FOR DESIGN OF A NEURO-FUZZY CONTROLLER BASED ON BEHAVIOR CLASSIFICATION", *Proc. of the 1995 IEEE International Conference on Neural Networks*, Vol. 5, p 2275-2280, 1995
 27. **Wei Li**, Z. Q. Sun, and H. Janocha: "AN APPROACH TO AUTOMATIC TUNING OF A FUZZY LOGIC CONTROLLER FOR MANIPULATORS", *Proc. of IEEE/RSJ International Conference On Intelligent Robots and Systems*, Vol.1, p 634-640, 1994
 28. **Wei Li**: "OPTIMIZATION OF A FUZZY LOGIC CONTROLLER USING NEURAL NETWORK", *Proc. of IEEE World Congress On Computational Intelligence, (FUZZ-IEEE'94)*, Vol. 1, p 223-227, 1994
 29. **Wei Li** and Q. H. Tan: "AN EFFICIENT SELF-ORGANIZING FUZZY CONTROLLER USING NEURAL NETWORKS", *Proc. of 1994 IEEE International Conference on Systems, Man, and Cybernetics*, Vol. 2, p 1797-1802, 1994
 30. **Wei Li** and Z. W. Wu: "A SELF ORGANIZING FUZZY CONTROLLER USING NEURAL NETWORKS", *Proc. of 1994 ASME International Computers in Engineering Conference*, Vol. 2, p 807-812, 1994
 31. **Wei Li**, Z. W. Wu and H. Janocha: "AUTOMATIC TUNING OF A FUZZY LOGIC CONTROLLER USING NEURAL NETWORK", *Proc. of IEEE International Conference on Industrial Technology*, 1994

32. **Wei Li**: "A NEW SELF-ORGANIZING FUZZY CONTROLLER", *Proc. of The 3rd International Workshop on Advanced Motion Control*, 1994
33. **Wei Li** et al: "Knowledge-Based Control of Mechanical Manipulators", *Proc. of 1993 IEEE Region 10 Conference on Computer, Communication, Control and Power Engineering*, Vol. 4, p. 194-198, 1993
34. **Wei Li** et al.: "FUZZY CONTROL OF ROBOTIC MANIPULATORS IN THE PRESENCE OF JOINT FRICTION AND LOAD CHANGES", *Proc. of 1993 ASME International Computers in Engineering Conference*, 1993
35. **Wei Li** et al.: "EFFECT OF MEMBERSHIP FUNCTIONS OF LINGUISTIC VARIABLES ON CONTROL PERFORMANCE", *Proc. of The First Chinese World Congress on Intelligent Control and Intelligent Automation*, 1993

Manipulator Motion Planning and Graphical Simulation

Journal Papers:

36. **Wei Li** et al.: "REAL-TIME SENSOR-BASED OBSTACLE MODELING IN CONFIGURATION SPACE FOR MANIPULATOR MOTION PLANNING", *Automation and Information Studies, Polish Academy of Sciences Journal*, vol.24, p.121-36, 1999.
37. **Wei Li**, C. Y. Ma, Z. S. Chen, Q. Cao, and J. N. Ye: "FAST MAPPING OF OBSTACLES INTO CONFIGURATION SPACE", *The Transactions of ASME, ASME Journal of Dynamic System, Measurement and Control*, Vol. 120, pp. 298-303, 1998, ASME Press, USA
38. **Wei Li** et al.: "SOLVING ROBOTIC 'PICK AND PLACE' FINDPATH PROBLEM", *ASME Journal, Manufacturing Review*, Vol.6, No.2, pp.114-128, 1993, ASME Press, USA
39. **Wei Li**: "AN APPROACH TO COLLISION AVOIDANCE OF INDUSTRIAL ROBOTS", *wt, Werkstattstechnik* (in German), Vol.44, No.3, pp.48, 1992, Springer-Verlag, Germany
40. **Wei Li**: "GRAPHIC DESIGN AND SIMULATION OF ROBOTS", *Konstruktion* (in German), Vol.44, No.3, pp.113-117, 1992, Springer-Verlag, Germany
41. **Wei Li**: "FAST MAPPING OBSTACLES IN THE CONFIGURATION SPACE", *Robotersysteme*, Vol.7, No.3, pp.148-154, 1991, Springer-Verlag, Germany
42. **Wei Li**: "AUTOMATIC DETERMINATION OF COLLISION-FREE PATHS FOR GENERAL ROBOTS", *Robotersysteme*, Vol.6, No.4, pp.218-224, 1990, Springer-Verlag, Germany
43. **Wei Li**, H. Jaschek, and D. Wloka: "MODIFICATION OF THE ROBERTS' ALGORITHM FOR THE GRAPHICAL ANIMATION OF ROBOTS", *Robotersysteme*, Springer-Verlager, Vol.6, pp.218-224, 1990, Germany
44. Chenyu Ma, **Wei Li**, Chen, Zushu Chen and Qi Cao "BEHAVIOR-BASED ROBOT MOTION PLANNING WITH MANY DEGREES OF FREEDOM", *Journal of Tsinghua University* (in Chinese), Vol. 37, No. 3, p 50-54, 1997

45. C. Y. Ma, **Wei Li** and Z. Q. Sun: "FAST COMPUTATION OF CONFIGURATION SPACE FOR SPACE ROBOT PATH PLANNING", *Journal of Tsinghua University (Science and Technology)* (in Chinese), Vol.1, No.5, pp.1-6, 1995
46. **Wei Li**: "ON REAL-TIME MOTION PLANNING FOR ROBOT APPLICATION IN FLEXIBLE MANUFACTURING SYSTEMS", (Invited Paper), *High Technology Letter* (English Edition), Vol. 2, No. 2, pp. 1-4, 1996
47. **Wei Li** et al.: "REAL-TIME COLLISION-FREE PATH PLANNING FOR ROBOTS IN CONFIGURATION SPACE", *Journal of Computer Science and Technology*, Vol.9, No.1, pp.37-52, 1994

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48. **Wei Li**; Zusun Chen; Wahl, F.M.; Kozlowski, K.R.: "SENSOR-BASED OBSTACLE MODELING IN CONFIGURATION SPACE FOR MANIPULATOR MOTION PLANNING." *Proc. of the First Workshop on Robot Motion and Control. RoMoCo'99*, Kiekrz, Poland, 28-29 June 1999.
49. **Wei Li** et al.: "SENSOR-BASED OBSTACLE MODELING IN CONFIGURATION SPACE FOR MANIPULATOR MOTION PLANNING", *Proc. of the IEEE 1996 International Conference on Multisensor Fusion and Integration*, p 265-272, 1996
50. **Wei Li**: "AN APPROACH TO ON-LINE PATH PLANNING FOR MULTIPLE ROBOTS", *Proc. of the 1995 American Control Conference (ACC '95)*, Vol 3, p 1896-1900, 1995
51. **Wei Li**: "BEHAVIOR BASED ROBOT MOTION PLANNING WITH MANY DEGREES OF FREEDOM IN UNKNOWN ENVIRONMENTS", *Proc. of International Mechanical Engineering Congress and Exposition*, The Winter Annual Meeting of the ASME, p 115-120, 1995
52. C. Y Ma, **Wei Li** et al.: "ROBOT MOTION PLANNING WITH MANY DEGREES OF FREEDOM", *Proc. of 1995 IEEE International Conference on Systems, Man, and Cybernetics*, Vol. 1, p. 892-897, 1995
53. **Wei Li** et al.: "ON-LINE MOTION PLANNING OF A MANIPULATOR WITH MANY DEGREES OF FREEDOM", *Proc. of Second International Conference on Mechatronics and Machine Vision in Practice*, 1995
54. **Wei Li**: "ON REAL-TIME MOTION PLANNING FOR ROBOT APPLICATION IN FLEXIBLE MANUFACTURING SYSTEMS", *Proc. of The International Conference on Intelligent Manufacturing*, p 620-625, 1995

Fuzzy Image Processing and Vision-Guided Vehicle Navigation

Journal Papers:

55. **Wei Li** and X. J. Jiang: "ROAD RECOGNITION FOR NAVIGATION OF AN AUTONOMOUS VEHICLE BY FUZZY REASONING", *Fuzzy Sets and Systems*, Vol. 93/3, pp. 275-280, 1998, ELSEVIER SCIENCE, North Holland
56. **Wei Li**, G. T. Lu, and Y. Q. Wang: "RECOGNIZING WHITE LINE MARKINGS FOR VISION-GUIDED VEHICLE NAVIGATION BY FUZZY REASONING", *Pattern Recognition Letters*, Vol. 18, No. 8, pp. 771-780, 1997, ELSEVIER SCIENCE, North Holland
57. **Wei Li** and Yanxing Wang, "METHOD OF VISION NAVIGATION OF AN OUTDOOR MOBILE ROBOT BY FUZZY INFERENCE", *Acta Electronica Sinica* (in Chinese), Vol 24, No 11, p 99-101, 1996

Book Chapter:

58. **Wei Li** et al.: "VISION BASED BEHAVIOR CONTROL OF AN AUTONOMOUS VEHICLE IN OUT-DOOR ENVIRONMENTS BY FUZZY REASONING", (Invited Talk), *Modeling and Planning for Sensor-Based Intelligent Robot Systems*, pp.311-325, Springer-Verlag, Germany, 1999
59. **Wei Li**, F. M. Wahl, B. Krebs and J. Farrell: "EXTRACTION OF LINE AND STEP EDGES BY FUZZY REASONING", *Computational Intelligence for Modelling, Control and Automation*, (Evolutionary Computation & Fuzzy Logic for Intelligent Control, Knowledge Acquisition & Information Retrieval, edited by M. Mohammadian), pp.507-512, IOS Press, Netherlands, 1999

International Conference Papers:

60. **Wei Li** and F. M. Wahl: "VISION NAVIGATION OF AN AUTONOMOUS VEHICLE BY FUZZY REASONING", *Proc. of IX European Signal Processing Conference*, vol. IV, pp.2213-2216, 1998
61. **Wei Li** et al.: "ROAD RECOGNITION FOR NAVIGATION OF AN AUTONOMOUS VEHICLE BY FUZZY REASONING", *Proc. of the 1996 IEEE International Conference Fuzzy Systems*, p 246-250, 1996
62. **Wei Li** et al. "DETECTION OF ROAD EDGES FOR AN AUTONOMOUS MOBILE VEHICLE BY FUZZY LOGIC INFERENCE", *Proc. of International Conference on Neural Information Processing*, 1995

Behavior Based Control of Mobile Robot Navigation

Journal Papers:

63. **Wei Li** and C. Y. Ma: "A NEURO-FUZZY SYSTEM ARCHITECTURE FOR BEHAVIOR BASED CONTROL OF A MOBILE ROBOT IN UNKNOWN ENVIRONMENTS", *Fuzzy Sets and Systems*, Vol. 87/2, 1997, ELSEVIER SCIENCE, North Holland
64. **Wei Li** and X. G. Chang "A NEURO-FUZZY CONTROLLER FOR A STOKER-FIRED BOILER, BASED ON BEHAVIOR MODELING", *Control*

- Engineering Practice*, Vol. 7, No.4, pp.469-481, 1999, Pergamon Press, ELSEVIER SCIENCE, UK
65. **Wei Li**: "FUZZY-LOGIC-BASED BEHAVIOR CONTROL OF AN AUTONOMOUS MOBILE SYSTEM IN UNKNOWN ENVIRONMENTS", *Engineering Application of Artificial Intelligence*, vol.7, no.5, pp.521-531, 1994
66. **Wei Li**: "REACTIVE BEHAVIOR CONTROL OF A MOBILE ROBOT IN UNKNOWN ENVIRONMENTS USING FUZZY LOGIC", *Control Theory & Applications*, vol.13, no.2, pp.153-62, 1996
67. **Wei Li** et al.: "FUZZY LOGIC BASED BEHAVIOR FUSION FOR NAVIGATION OF AN INTELLIGENT MOBILE ROBOT", *Journal of Computer Science and Technology*, Vol.11, No.4, pp. 321-325, 1996

International Conference Papers:

68. **Wei Li**, Jay Farrell, F. M. Wahl and Krzysztof R. Kozlowski: "A NONHOLONOMIC MOBILE ROBOT NAVIGATION IN UNCERTAIN ENVIRONMENTS BASED ON BEHAVIOR CONTROL", *Proc. of World Automation Congress*, Maui, Hawaii, June 11-16, 2000
69. C. Y. Ma, **Wei Li**, and Lifeng Liu: "MOBILE ROBOT MOTION BY INTEGRATION OF LOW-LEVEL BEHAVIOR CONTROL AND HIGH-LEVEL GLOBAL PLANNING", *Proc. of the 1996 IEEE International Conference on Systems, Man, and Cybernetics*, p 310-315, 1996
70. **Wei Li**: "A HYBRID NEURO-FUZZY SYSTEM FOR SENSOR BASED ROBOT NAVIGATION IN UNKNOWN ENVIRONMENTS", *Proc. of the 1995 American Control Conference (ACC '95)*, Vol. 4, p 2749-2753, 1995
71. **Wei Li**: "NEURO-FUZZY SYSTEMS FOR INTELLIGENT ROBOT NAVIGATION AND CONTROL UNDER UNCERTAINTY", *Proc. of 1995 IEEE International Conference on Fuzzy Systems*, p.1747-1754, 1995
72. **Wei Li**: "'PERCEPTION ACTION' BEHAVIOR CONTROL OF A MOBILE ROBOT IN UNCERTAIN ENVIRONMENTS USING FUZZY LOGIC", *Proc. of IEEE/RSJ International Conference On Intelligent Robots and Systems*, Vol., p 439-446, 1994
73. **Wei Li**: "FUZZY LOGIC BASED ROBOT NAVIGATION IN UNCERTAIN ENVIRONMENTS BY MULTISENSOR INTEGRATION", *Proc. of 1994 IEEE International Conference on Multisensor Fusion and Integration for Intelligent System*, p 259-264, 1994
74. **Wei Li**: "FUZZY LOGIC BASED 'PERCEPTION ACTION' BEHAVIOR CONTROL OF AN MOBILE ROBOT IN UNCERTAIN ENVIRONMENTS", *Proc. of IEEE World Congress On Computational Intelligence (FUZZ-IEEE'94)*, Vol. 3, p 1626-1631, 1994
75. **Wei Li** and X. Fen: "BEHAVIOR FUSION FOR ROBOT NAVIGATION IN UNCERTAIN ENVIRONMENTS USING FUZZY LOGIC", *Proc. of 1994 IEEE International Conference on Systems, Man, and Cybernetics*, Vol. 2, p 1790-1796, 1994
76. **Wei Li**: "FUZZY LOGIC BASED BEHAVIOR FUSION STRATEGY FOR ROBOT NAVIGATION IN UNCERTAIN ENVIRONMENTS", *Proc. of IFAC*

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77. **Wei Li** and K. Z. He: "SENSOR-BASED ROBOT NAVIGATION IN UNCERTAIN ENVIRONMENTS USING FUZZY LOGIC", *Proc. of 1994 ASME International Computers in Engineering Conference*, Vol. 2, p 813-818, 1994

Other Topics

Journal Papers:

78. Z. W. Wu, **Wei Li** and Z. Q. Sun: "Optimization Design of Simulation of Floor Plate Structure Used in a Railway Passenger Train Based on Genetic Algorithm", *Acta Simulata Systematica Sinica* (in Chinese), Vol.7, No.3, pp.52-57, 1995
79. **Wei Li**, L. W. Wang, and Y. P. Xiao: "Three-Phase Current-Fed Inverter Theory Analysis on Sine-Current Modulation", *Journal of Northern Jiaotong University* (in Chinese), Vol.23, No.2, pp.89-94, 1986
80. **Wei Li**, L. W. Wang, and Y. P. Xiao: "Analysis and CAD Concerning Converting Parameters of Current Mode Inverter", *Electric Drive For Locomotive* (in Chinese), No.2, pp.20-24, 1986
81. **Wei Li**, L. W. Wang, Y. P. Xiao: "The Control of Micro-Processor for Current Mode DC-AC Inverter", *Electric Drive For Locomotive* (in Chinese), No.6, pp.6-10, 1985

International Conference Papers:

82. Yan SHEN, **Wei Li** and X. G. Chang: "Analysis of Problems of Consonants Pronunciation of Foreign Beginners by Soft Computing", *Proc. of The 5th World Multi-Conference on Systemics, Cybernetics and Informatics SCI*, 2001
83. Z. W. Wu and **Wei Li**: "OPTIMIZATION OF FLOOR PLATE STRUCTURE IN RAILWAY PASSENGER TRAIN BY GENETIC ALGORITHM", *Proc. of International Conference on Neural Information Processing*, 1995

Translation

84. Y. P. Xiao and **Wei Li**: "ADJUSTABLE SPEED AC DRIVE SYSTEMS" (Translation from English to Chinese), China Railway Publishing House, 1986