Journals, Invited Papers, Edited Books

1.   Pölzleitner, W., "Classification of defects on wooden surfaces using Gabor filters and genetic algorithm design," *Machine Vision for the Inspection of Natural Products,* Springer Verlag, 2002.

2.   Pölzleitner, W., "Image Analysis and Computer Vision," *Encyclopedia of Library and Information Sciences,* Marcel Dekker, 2001.

3.   Paar, G., Rottensteiner, F., and Pölzleitner, "Image Matching Strategies," *Digital Image Analysis: Selected Techniques and Applications,* New York: Springer Verlag, 2001, pp. 393-410.

4.   Rottensteiner, F., Paar, G., and Pölzleitner, W., "3D Reconstruction: Fundamentals," *Digital Image Analysis: Selected Techniques and Applications,* New York: Springer Verlag, 2001, pp. 373-391.

5.   Brandner, M., Pinz, A., and Pölzleitner, W., "(Invited paper) A new hierarchical approach to pattern matching," *SPIE Robot Vision Newsletter*, 2000.

6.   Batchelor, B. e., Lammasniemi, J., Wiggenhauser, H., Busse, G., and Pölzleitner, W. *Diagnostic Imaging Technologies & Industrial Applications*. SPIE, 1999.

7.   Pölzleitner, W., "Image Analysis and Synthesis," *Encyclopedia of Computer Science and Technology,* 14 ed., Marcel Dekker, 1998.

8.   Pinz, A. and Pölzleitner, W. *Machine Perception Applications, Proceedings of the IAPR TC-8 Workshop.* Pinz, A. and Pölzleitner, W. Wien: OCG, 1996.

9.   *Image Analysis and Synthesis, Proceedings of the 17th OAGM Workshop and Conference*. Pölzleitner, W. Graz, Austria: Österreichische Computer Gesellschaft, 1993.

10.   Pölzleitner, W., "DAM, Regression Analysis, and Attentive Recognition," in Wechsler, H. (ed.), Academic Press, 1992.

11.   Pölzleitner, W., "Coefficient Focusing for the Moore-Penrose Associative Memory," in Sood, A. and Wechsler, H. (eds.), Springer-Verlag, 1992.

12.   Pölzleitner, W. and Schwingshakl, G., "Real-Time Surface Grading of Profiled Boards," *Industrial Metrology* , vol. 2, no. 3\&4, pp. 283-298, 1992.

13.   Pölzleitner, W. and Wechsler, H., "Active Perception Using DAM and Estimation Techniques," in Sandini, G. (ed.), Springer Verlag, 1992.

14.   Pölzleitner, W. and Wechsler, H., "Selective and Focused Invariant Recognition Using Distributed Associative Memories (DAM)," *IEEE Trans.Pattern Anal.Mach.Intell.*, vol. 11, no. 8, pp. 809-814, 1990.

15.   Pölzleitner, W., "Algorithms for the Classification of Profiled Boards by Real- Time Computer Vision." Technische Universität Graz, 1989.

Conference Articles and Other Publications

16.   Pölzleitner, Wolfgang, "android_app_sync - A Tool for the Configuration und Synchronisation of Android Tablet Pools" In *Praxis und OpenSource Software Tools, eEducation Praxistage 2018. www.eeducation.at. 2018*

17.   Loibner, Gernot, Andreas Schwarzl, Matthias Kovac, Dietmar Paulus, and Wolfgang Polzleitner. "Development of a written music recognition system using Java and open source technologies." In *Optics East 2005*. International Society for Optics and Photonics, 2005.

18.   Polzleitner, Wolfgang, and Gert Schwingshakl. "Real-time color-based texture analysis for sophisticated defect detection on wooden surfaces." In *Optics East*, pp. 54-69. International Society for Optics and Photonics, 2004.

19.   Haas, A, Maierhofer, R, Sendlhofer, R, and Pölzleitner, W (To be published) Real-time scene analysis for the localization of the ball position in soccer games *6th World Multiconference on Systemics, Cybernetics, and Informatics Orlando, Florida, July 14-18, 2002* , Orlando, FL: 2002

20.   Pölzleitner, W (To be published) Defect detection on wooden surfaces using color-based texture analysis and genetic feature selection *6th World Multiconference on Systemics, Cybernetics, and Informatics Orlando, Florida, July 14-18, 2002*, Orlando, FL: 2002

21.   Pölzleitner, W (To be published) High-speed matching of complex structured wafer chips using Gabor filter-based perceptual organization *Machine Vision and Three-Dimensional Imaging Systems for Inspection and Metrology*, Boston: SPIE, 2002

22.   Brandner, M, Pinz, A, and Pölzleitner, W (Invited paper) A comparative study of sophisticated high-speed pattern matching systems for industrial applications *Intelligent Robots and Computer Vision XX: Algorithms, Techniques, and Active Vision*, pp29-40 Boston: SPIE, 2001

23.   Haas, A, Maierhofer, R, Sendlhofer, R, and Pölzleitner, W (To be published) Goalwatcher: A system for the automatic detection of the ball position in soccer *Machine Vision and Three-Dimensional Imaging Systems for Inspection and Metrology*, Boston: SPIE, 2001

24.   Pölzleitner, W Invariant pattern location using unsupervised color-based perceptual organization and graph-based matching *IJCNN 2001: INNS-IEEE International Joint Conference on Neural Networks*, Washington, DC, July 14-19: 2001

25.   Pölzleitner, W Defect detection on wooden surfaces using Gabor filters with evolutionary algorithm design *IJCNN 2001: INNS-IEEE International Joint Conference on Neural Networks*, Washington, DC, July 14-19: 2001

26.   Pölzleitner, W and Schwingshakl, G Scanning for textural surface defects - a robust system for hardwood parquet inspection *ScanTech 2001: The Ninth International Conference on Scanning Technology and Process Optimization for the Wood Industry*, pp181-195 2001

27.   Pölzleitner, W Color-based perceptual organization for rotation and scale-invariant pattern matching *Fifth Multi-Conference on Systemics, Cybernetics, and Informatics*, Orlando, Fl, July 22-25: 2001

28.   Brandner, M, Pinz, A, and Pölzleitner, W (Invited paper) A new approach to pattern matching for industrial applications *Intelligent Robots and Computer Vision XIX: Algorithms, Techniques, and Active Vision*, Proc SPIE, 2000

29.   Brandner, M, Pinz, A, and Pölzleitner, W A concept for real-time, robust pattern matching Österreichische Arbeitsgemeinschaft für Mustererkennung - Austrian Association for Pattern Recognition, 2000

30.   Pölzleitner, W Color-based localization of patterns through distortion tolerant graph matching *Machine Vision and Three-Dimensional Imaging Systems for Inspection and Metrology*, 2000

31.   Pölzleitner, W and Schwinghakl, G INTELLIWOOD - Die Nutzung Optoelektronischer Einheiten Zur Erfassung von Sortiermerkmalen *Grazer Holzbau-Fachtagung 2000 Sortierung und Festigkeit: Maschinelle Festigkeitssortierung basierend auf vorwiegend berührungslosen Sortiereinheiten*, Lignum Research, 2000

32.   Pölzleitner, W and Schwinghakl, G Quality classification of wooden surfaces using Gabor filters and genetic feature optimization *SPIE Conference on Intelligent Robots and Computer Vision XVIII: Algorithms, Techniques, and Active Vision*, 3837, pp220-231 Boston, MA: SPIE Proceedings, 1999

33.   Pölzleitner, W IntelliWood - Intelligent Manufacturing of Wood Products Using Color, X-Ray, and Computer Tomography-Based Quality Control *IST-99 Conference*, Helsinki, Finland: 1999

34.   Paar, G, Sidla, O, and Pölzleitner, W Genetic feauture selection for highly-accurate stereo reconstruction of natural surfaces *SPIE Conference on Intelligent Robots and Computer Vision XVII: Algorithms, Techniques, and Active Vision*, 3522, pp455-466 Boston, MA: SPIE Proceedings, 1998

35.   Pölzleitner, W and Sidla, O Accuracy optimization in hierarchical stereo disparity computation using the back-matching distance *Applications of Digital Image Processing XX*, 3164, San Diego: SPIE Proceedings, 1997

36.   Sidla, O and Pölzleitner, W Optimizing context-based stereo disparity computation using genetic feature selection *Intelligent Robots and Computer Vision XVI: Algorithms, Techniques, Active Vision, and Materials Handling*, 3208, Pittsburgh: SPIE Proceedings, 1997

37.   Pölzleitner, W and Casasent, D A unified approach to control point detection and stereo disparity computation *Intelligent Robots and Computer Vision XV: Algortihms, Techniques, Active Vision, and Materials Handling*, 2904-24, Boston: SPIE, 1996

38.   Pölzleitner, W and Casasent, D Stereo disparity computation using Gabor Filters and feature selection techniques *Videometrics IV*, Orlando, Fl: Proc SPIE, Vol 2752, 1996

39.   Paar, G, Sidla, O, and Pölzleitner, W Vision-based Navigation and 3D Reconstruction for Robotic Applications *Proc Neue Tendenzen in der Robotertechnologie und Fertigungstechnik*, Steyr: Profaktor GmbH, 1996

40.   Pölzleitner, W and Sidla, O A Statistical Framework for Stereo *Intelligent Robots and Computer Vision XIV: Algorithms, Techniques, Active Vision, Materials Handling*, Philadelphia: Proc SPIE, Vol 2588, 1995

41.   Pölzleitner, W Syntactic Recognition of Defects on Wooden Boards *Intelligent Robots and Computer Vision XIV: Algorithms, Techniques, Active Vision, Materials Handling*, Philadelphia: Proc SPIE, Vol 2588, 1995

42.   Pölzleitner, W Optimizing the Performance of Near Perfect Defect Detection Machines *Machine Vision Applications, Architectures, and Systems Integration IV*, Philadelphia: Proc SPIE, Vol (to appear), 1995

43.   Pölzleitner, W and Schenk, A From 2D Inspection to 3D Autonomous Navigation - a Tour de Force of Computer Vision at Joanneum Research *Bildverarbeitung in der industriellen Praxis*, Steyr, Austria: Profactor GmbH, 1995

44.   Paar, G, Sidla, O, and Pölzleitner, W Natural Feature Tracking for Autonomous Navigation *International Symposium on Automotive Technology and Automation*, Intern Symp on Advanced Transportation Applications (ISATA), 1995

45.   Paar, G, Bauer, A, and Pölzleitner, W A System for On-line 3D Measurement of Rough Natural Surfaces *Videometrics IV*, Philadelphia: Proc SPIE, Vol 2598, 1995

46.   Paar, G and Pölzleitner, W Autonomous Spacecraft Navigation Using Computer Vision - A Case Study for the Moon *Mobile Robots IX*, Philadelphia: Proc SPIE, Vol 2591, 1995

47.   Pölzleitner, W and Niel, A Automatic Inspection of Leather Surfaces *Machine Vision Applications, Architectures, and Systems Integration III*, Proc SPIE, Vol 2347, 1994

48.   Pölzleitner, W and Ulm, M A Comparative Study of Camera Calibration Algorithms with Application to Spacecraft Navigation *Videometrics III*, Proc SPIE, Vol 2350, 1994

49.   Pölzleitner, W and Schwingshakl, G ARGUS: A Flexible Real-time System for 2D Defect and Texture Classification of Wooden Materials *Optics in Agriculture, Forestry, and Biological Processing*, Proc SPIE, Vol 2345, 1994

50.   Pölzleitner, W *Real-Time Hazard Detection* ESA/ESTEC Technical Note, Joanneum Research, Institute for Digital Image Processing, 1994

51.   Pölzleitner, W (Invited Paper) From Industrial Inspection to Spacecraft Navigation - A Tour de Force of Computer Vision in Austria *Proc 5th Intl Workshop on Digital Image Processing and Computer Graphics, "Image Processing and Computer Optics",* Proc SPIE, Vol 2363, 1994

52.   Pölzleitner, W and Paar, G Surface-relative Navigation Using Computer Vision *Mobile Robots IX*, Proc SPIE, Vol 2352, 1994

53.   Paar, G, Pölzleitner, W, and Ulm, M Automatic Extrinsic Calibration Using a Flat Target *International Dedicated Converence on Robotics, Motion and Machine Vision,* Intern Symp on Advanced Transportation Applications (ISATA), 1994

54.   Chen, P, Chen, C, DShubinsky, G, Sidla, O, and Pölzleitner, W Optical Inspection of Tire Tread Defects Using Image Processing and Pattern Recognition Techniques *Vision, Sensors, and Control for Automated Manufacturing Systems,* Boston: Proc SPIE Vol 2063, 1993

55.   Niel, A and Pölzleitner, W A system for automatic inspection of the wearing surface of bearing shells *Optical Tools for Manufacturing and Advanced Automation, Machine Vision Applications, Architectures, and Systems Integration II,* Boston: Proc SPIE Vol 2064, 1993

56.   Pölzleitner, W and Paar, G Computer Vision for Landing Site Identification *Workshop on Computer Vision and Applications*, Antibes: 1993

57.   Pölzleitner, W and Ulm, M Robust Camera Calibration for Spacecraft Motion Estimation Pölzleitner, W *Image Analysis and Synthesis, 17th ÖAGM Workshop,* Graz, Austria: Österreichische Computer Gesellschaft, 1993

58.   Pölzleitner, W Convex shape refinement using dynamic programming for surface defect classification on wooden materials *Optical Tools for Manufacturing and Advanced Automation, Intelligent Robots and Computer Vision XII: Algorithms and Techniques,* Boston: Proc SPIE Vol 2055, 1993

59.   Pölzleitner, W and Ulm, M Robust dynamic 3D motion estimation and reconstruction using landmarks *Optical Tools for Manufacturing and Advanced Automation, Videometrics II,* Boston: Proc SPIE Vol 2067, 1993

60.   Paar, G, Schwinghakl, G, Pölzleitner, W, and Sidla, O Automatic Landing Site Selection by Computer Vision *44th Congress International Astronautical Federation, Symposium on Space Systems,* Graz: 1993

61.   Cherkassky, V, Pölzleitner, W, and Wechsler, H Reactive Perception Using Distributed Associative Memory (DAM) *Intl Conference on Modeling Problems in Bionics (BIOMOD 92),* St Petersburg, Russia: 1992

62.   Pölzleitner, W and Wechsler, H Selective and Robust Perception Using Multiresolution Estimation Techniques *11th IAPR Intl Conf Pattern Anal (ICPR),* IAPR, 1992

63.   Pölzleitner, W and Paar, G Robust Spacecraft Motion Estimation and Elevation Modeling Using a Moving Binocular Head *Cooperative Intelligent Robotics in Space III,* Boston: Proc SPIE Vol 1829, 1992

64.   Pölzleitner, W and Wechsler, H *Active Perception Using DAM and Estimation Techniques* Technical Report DIB-56, Joanneum Research, Institute for Digital Image Processing, 1992

65.   Pölzleitner, W *An accuracy investigation of spacecraft motion estimation using vision and Kalman filtering* Technical Report DIB-61, Joanneum Research, Institute for Digital Image Processing, 1992

66.   Pölzleitner, W and Wechsler, H *Selective and Robust Perception using Multiresolution Estimation Techniques* Technical Report DIB-57, Joanneum Research, Institute for Digital Image Processing, 1992

67.   Pölzleitner, W and Ulm, M *A new robust and efficient algorithm for intrinsic and extrinsic camera calibration* Technical Report DIB-60, Joanneum Research, Institute for Digital Image Processing, 1992

68.   Pölzleitner, W and Paar, G Digital Elevation Modeling and Robust Spacecraft Motion Estimation Using a Seven-Degrees-of-Freedom Binocular Head *Mustererkennung'92, 16th ÖAGM Workshop* , Österreichische Computer Gesellschaft, 1992

69.   Pölzleitner, W and Paar, G Elevation Modeling and Motion Tracking Using a Binocular Camera System with Seven Degrees of Freedom *11th IAPR Intl Conf Pattern Anal (ICPR)*, IAPR, 1992

70.   Paar, G and Pölzleitner, W Descent and Landing Phase: Vision-Based Robust Spacecraft Motion Estimation and Elevation Modeling *Intl Symposium Missions, Technologies and Design of Planetary Mobile Vehicles*, Toulouse: 1992

71.   Paar, G and Pölzleitner, W Robust Disparity Estimation in Terrain Modeling for Spacecraft Navigation *11th IAPR Intl Conf Pattern Anal (ICPR)*, IAPR, 1992

72.   Paar, G, Pölzleitner, W, and Classen, H-J *Planetary Body High Resolution 3D Model of Terrain* ESTEC Contract 9195/90/NL/SF Final Report, Joanneum Research, 1992

73.   Schwingshakl, G and Pölzleitner, W Automatic Transputer Code Generation for Flexible Real-Time Vision Systems *Machine Vision Applications, Architectures, and Systems*, Boston: Proc SPIE Vol 1823, 1992

74.   Schwingshakl, G and Pölzleitner, W Flexible Real-Time Programming of a Distributed Transputer-Based Vision System *11th IAPR Intl Conf Pattern Anal (ICPR)*, IAPR, 1992

75.   Schwingshakl, G and Pölzleitner, W *Flexible Real-Time Programming of a Distributed Transputer-Based Vision System* Technical Report DIB-58, Joanneum Research, Institute for Digital Image Processing, 1992

76.   Wechsler, H and Pölzleitner, W Attentional Resolution and Selective Recognition *AAAI Spring Symposium*, Stanford, California: 1992

77.   Pölzleitner, W Knowledge Representation for 2D Real-Time Object Recognition *IEEE Interntl Conf Systems, Man, and Cybernetics*, Charlottesville, VA: 1991

78.   Pölzleitner, W Pyramid-Based Preattentive and Attentive Vision Using Moore- Penrose Associative Memory *Mustererkennung'91, 15th ÖAGM Workshop*, Wien: R Oldenburg, 1991

79.   Pölzleitner, W *The Relationship Between DAM and Regression Analysis for Crosstalk Reduction and Pattern Recognition* Technical Report DIB-55, Joanneum Research, Institute for Digital Image Processing, 1991

80.   Pölzleitner, W and Wechsler, H Simulating Preattentive and Attentive Vision with Moore-Penrose Associative Memories *IEEE Interntl Conf Systems, Man, and Cybernetics*, Charlottesville, VA: 1991

81.   Pölzleitner, W, Paar, G, and Schwinghakl, G Visual Natural Feature Tracking for Autonomous *42nd International Astronautical Federation, Symposium on Space Systems*, Montreal: 1991

82.   Pölzleitner, W Real-Time Syntactic Segmentation with Application to Images of Wooden Boards *Proc Workshop on Digital Image Processing and Computer Graphics*, Vienna: Academy of Sciences, 1991

83.   Pölzleitner, W *Elektronisches Auge* Austria Innovativ 3, pp27 1991

84.   Pölzleitner, W, Paar, G, and Schwingshakl, G Natural Feature Tracking for Space Craft Guidance by Vision in the Descent and Landing Phases *ESA Workshop on Computer Vision and Images Processing for Spaceborn Applications*, Noordwijk: 1991

85.   Paar, G and Pölzleitner, W Stereovision and 3-D Terrain Modeling for Planetary Exploration *First ESA Workshop on Computer Vision and Image Processing for Spaceborne Applications,* Noordwijk, NL: ESA/ESTEC, 1991

86.   Paar, G and Pölzleitner, W Automatic 3D Elevation Modeling by Pyramid-Based Stereo Vision Using Remotely Sensed Data *Mustererkennung'91, 15th ÖAGM Workshop,* Wien: R Oldenburg, 1991

87.   Ruppert, G and Pölzleitner, W Automatic Code Generation for Real-Time 2D Object Recognition on a Transputer Network *Mustererkennung'91, 15th ÖAGM Workshop,* Wien: R Oldenburg, 1991

88.   Schwingshakl, G and Pölzleitner, W TAVS -- Ein echtzeitfähiges Bildverarbeitungssystem auf Transputerbasis Zorn, W and Bender, K *RISC'91, 2 int Fachmesse und Kongress Karls\-ruhe, ,* pp813-834 Berlin: Vde-Verlag, 1991

89.   Pölzleitner, W and Stifter, S Active Sensing Using Associative Processes and 3D Geometric Modeling Bernroider, G and Pinz, A *Mustererkennung'90, 14th ÖAGM Workshop,* Wien: R Oldenburg, 1990

90.   Pölzleitner, W and Schwingshakl, G Real-Time Classification of Wooden Boards *High-Speed Inspection Architectures, Barcoding, and Character Recognition,* Boston: Proc SPIE Vol 1384, 1990

91.   Pölzleitner, W and Wechsler, H *Invariant Pattern Recognition Using Associative Memory* Technical Report DIB-48, Joanneum Research, Institute for Digital Image Processing, 1990

92.   Pölzleitner, W Geometric Property Measurent of Convex Objects Using Fuzzy Sets *Intelligent Robots and Computer Vision IX: Algorithms and Techniques,* Boston: Proc SPIE Vol 1381, 1990

93.   Pölzleitner, W Knowledge Representation by Decision Networks for Real-Time Hierarchical Classification Pinz, A *Mustererkennung'89, 13th ÖAGM Workshop,* Wien: R Oldenburg, 1989

94.   Pölzleitner, W and Wechsler, H Object Recognition by Selective Focusing Using a Moore-Penrose Associative Memory Burkhardt, H, Hoehne, K, and Neumann, B *Mustererkennung 1989, 11 DAGM-Symposium,* pp465-472 Hamburg: Springer, 1989

95.   Pölzleitner, W *Experimentelle Ermittlung der Treffsicherheit mit 500 Brettern -- Fichte* Joanneum Research, Institute for Digital Image Processing, Graz, Internal Report, 1987

96.   Pölzleitner, W The Perimeter of Fuzzy Sets -- A Tool for the Recognition of Convex Objects Kropatsch, W G and Mandl, P *Mustererkennung'86: Bildverarbeitung in den Geowissenschaften, Bildpyramiden,* pp172-191 Wien: R Oldenburg, 1986

97.   Pölzleitner, W A Hough Transform Method to Segment Images of Wooden Boards *8th Intl Conf Pattern Recognition (ICPR),* pp262-264 Paris: 1986

98.   Pölzleitner, W *Klassifikation von Rotstreif und Blaufäule -- Abschätzung der Fehlerrate* Joanneum Research, Institute for Digital Image Processing, Graz, Internal Report, 1986

99.   Pölzleitner, W *Entwicklung eines Gerätes zur Güteprüfung von Säge- und Profilbrettern* FFF-Endbericht, Joanneum Research, Institute for Digital Image Processing, 1985

100.   Kropatsch, W and Pölzleitner, W Automatische Profilbrettklassifikation - Welche Technologien kommen für den industriellen Einsatz in Frage Schuster, E *Mustererkennung: Medizin, Sprachanalyse, Rechnerarchitekturen,* pp55-68 Wien: R Oldenburg, 1984

101.   Pölzleitner, W, Meyer, A U, and Stephens, G M Data Acquisition and Modeling in Clinical Electrooculography *Intl Fed Autom Control, IX Triennial World Congress,* 2, pp69-75 Budapest: 1984

102.   Pölzleitner, W and Kropatsch, W Überprüfung von Holzstrukturen in Echtzeit durch modellgestützte Datenreduktion Kropatsch, W *Mustererkennung 1984: DAGM--ÖAGM Symposium, Graz*, pp198-204 Springer, 1984