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Selected Publications in Image Understanding and Computer Vision from 1974 to 1983

J.G. Verly

18 April 1985

Lincoln Laboratory
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
LEXINGTON, MASSACHUSETTS

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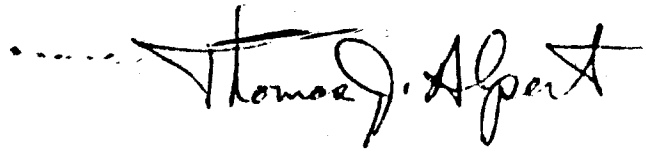

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
LINCOLN LABORATORY

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Group 21

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INTRODUCTION

This report contains a list of selected publications in image understanding and computer vision. The list was compiled as part of our work for the DARPA-sponsored Autonomous IR Sensor Technology program, and the choice of references was directly influenced by the needs of that program. Therefore, emphasis has been placed on theories, techniques, and systems for interpreting complex imagery; the more classical fields of image processing, e.g., filtering, enhancement, restoration, coding, and reconstruction, have not been included. The topics of edge detection and region segmentation as well as the well-known scene analysis problems of shape recognition from stereo, shading, texture, and motion have also been excluded.

The bibliography covers the last decade (1974-1983) and is based on the yearly surveys published by A. Rosenfeld in the Journal initially called "Computer Graphics and Image Processing (CGIP)" and now "Computer Vison, Graphics, and Image Processing (CVGIP)". The corresponding references are:

[1] A. Rosenfeld, "Picture Processing :1983," CVGIP 26, 1984, 347-393.

[2] A. Rosenfeld, "Picture Processing :1982," CVGIP 22, 1983, 339-387.

[3] A. Rosenfeld, "Picture Processing :1981," CGIP 19, 1982, 35-75.

[4] A. Rosenfeld, "Picture Processing :1980," CGIP 16, 1981, 52-89.

[5] A. Rosenfeld, "Picture Processing :1979," CGIP 13, 1980, 46-79.

[6] A. Rosenfeld, "Picture Processing :1978," CGIP 9, 1979, 354-393.

[7] A. Rosenfeld, "Picture Processing :1977," CGIP 7, 1978, 211-242.

[8] A. Rosenfeld, "Picture Processing :1976," CGIP 6, 1977, 157-183.

[9] A. Rosenfeld, "Picture Processing :1975," CGIP 5, 1976, 215-237.

[10] A. Rosenfeld, "Picture Processing :1974," CGIP 4, 1975, 133-155.

These surveys contain a total of 7,486 references of which 1,254 were selected for inclusion in this report. The table below shows the details of the selection process on a yearly basis.

YEAR	TOTAL REFERENCES	NUMBER SELECTED
83	1,138	201
82	1,185	208
81	982	147
80	897	131
79	700	160
78	819	153
77	609	103
76	461	67
75	354	43
74	341	41
TOTAL	7,486	1,254

In this report, the references are organized by years, starting with 1983, and also by subjects within each year. The subject classes and titles are those of Rosenfeld's surveys and the reference numbers have also been kept unchanged to simplify the task of comparing this bibliography with the original source. Some editing was required to eliminate problems due to the use of "ibid" in the surveys and to maintain the same set of Journal abbreviations throughout the bibliography.

This report has been found extremely useful in the context of the Automous IR Sensor Technology program, but it should be of interest to any researcher involved in image understanding and computer vision. It can be read in a few hours and provides a fairly accurate view of the trends in the fields over the last decade.

ABBREVIATIONS

AI	Artificial Intelligence
BC	Biological Cybernetics
CACM	Communications of the ACM
CG	Computer Graphics (ACM Quarterly)
CGA	IEEE Computer Graphics and Applications
CGIP	Computer Graphics and Image Processing
CS	Computing Surveys
CVGIP	Computer Vision, Graphics, and Image Processing
I&C	Information and Control
IFIP	IFIP Congress Proceedings
IJRR	International Journal of Robotics Research
IPL	Information Processing Letters
IS	Information Sciences
IVC	Image and Vision Computing
JACM	Journal of the ACM
J. CYBER	Journal of Cybernetics
MI	Machine Intelligence
PACM	Proceedings of the ACM
P-IEEE	Proceedings of the IEEE
P-NCC	Proceedings of the National Computer Conference
PR	Pattern Recognition
PRL	Pattern Recognition Letters
P-SPIE	Proceedings of the SPIE
SFCS	Symposium on Foundations of Computer Sciences
SIAM JAM	SIAM Journal of Applied Mathematics
SIAM JC	SIAM Journal of Computing
SP	Signal Processing
STOC	Symposium on Theory of Computing
T-AC	IEEE Transactions on Automatic Control
T-ASSP	IEEE Transactions on Acoustics, Speech, and Signal Processing
T-CAS	IEEE Transactions on Circuits and Systems
T-COMP	IEEE Transactions on Computers
T-IT	IEEE Transactions on Information Theory
T-PAMI	IEEE Transactions on Pattern Analysis and Machine Intelligence
T-SE	IEEE Transactions on Software Engineering
T-SMC	IEEE Transactions on Systems, Man, and Cybernetics

APPENDIX A: 1983

A. General References

A.1. Meetings

1. Army Research Office Workshop on Unsupervised Image Classification (Providence, RI, April 14-16, 1983).

2. Proceedings: Trends & Applications, 1983: Automating Intelligent Behavior-Applications and Frontiers (Gaithersburg, MD, May 25-26, 1983), IEEE Publ. 83CH1887-9.

3. Proceedings, CVPR '83: IEEE Computer Society Conference on Computer Vision and Pattern Recognition (Washington, DC, June 19-23, 1983), IEEE Publ. 83CH1891-1.

4. L. S. Baumann, Ed., Proceedings: Image Understanding Workshop (Arlington, VA, June 23, 1983), Science Applications, Inc., McLean, VA, 1983.

5. Proceedings of the National Conference on Artificial Intelligence (AAAI-83, Washington, DC, August 22-26, 1983), American Association for Artificial Intelligence, Palo Alto, CA, 1983.

6. Workshop on Sensors and Algorithms for 3D Machine Perception (Washington, DC, August 22-23, 1983).

7. A. G. Tescher, Ed., Applications of Digital Image Processing VI (San Diego, CA, August 23-26, 1983), P-SPIE 432.

8. (IEEE Computer Society) Workshop on Applied Imagery Pattern Recognition (College Park, MD, September 27-28, 1983).

9. Third ASSP Workshop on Multidimensional Signal Processing (Lake Tahoe, CA, October 19-21, 1983).

10. (Army) Workshop on Autonomous Ground Vehicles (Leesburg, VA, October 24-26, 1983).

11. (Department of Energy) Workshop on Research Goals and Priorities in Intelligent Machines (Leesburg, VA, November 2-4, 1983).

12. Symposium on Intelligence Applications of Artificial Intelligence (Langley, VA, December 6-8, 1983).

13. IEE International Conference on Electronic Image Processing (York, UK, July 26-29, 1982).

14. R. M. Haralick, Ed., Pictoral Data Analysis (Proceedings of the NATO Advanced Study Institute on Pictorial Data Analysis, Bonas, France, August 1-12, 1982), Springer, Berlin, 1983.

15. A. Oosterlinck and A. G. Tescher, Eds., Applications of Digital Image Processing (Geneva, Switzerland, April 19-22, 1983), P-SPIE 397.

16. Proceedings of the first IPA [Information Processing Association of Israel] Conference on Image Processing, Computer Graphics, and Pattern Recognition (Beersheva, Israel, June 1983).

17. P. Johansen and P. W. Becker, Eds., Proceedings of the Third Scandinavian Conference on Image Analysis (Copenhagen, Denmark, July 12-14, 1983), Studentlitteratur, Lund, Sweden, 1983.

18. Alan Bundy, Ed., Proceedings of the Eighth International Joint Conference on Artificial Intelligence (IJCAI-83, Karlsruhe, FRG, August 8-12, 1983), W. Kaufmann, Inc., Los Altos, CA, 1983.

19. Proceedings, AUTBILD '83 (Jena, DDR, September 5-10, 1983), Friedrich-Schiller-Universitat, Jena, 1983.

20. British Pattern Recognition Association Second International Conference on Pattern Recognition (Oxford, UK, September 19-21, 1983).

21. Mustererkennung 1983 (Fifth DAGM Symposium, Karlsruhe, FRG, October 11-13, 1983).

A.2. Journals, Handbooks

22. K. Baker, Ed., Image and Vision Computing, Butterworths, UK, 1983.

23. R. M. Haralick, Guest Ed., [Special Issue on Computer Vision], CVGIP 22(1), April 1983, 1-203.

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26. P. R. Krishnaiah and L. N. Kanal, Eds., Handbook of Statistics, Vol. 2: Classification, Pattern Recognition, and Reduction of Dimensionality, North-Holland, Amsterdam, 1982.

A.3. Textbooks, Surveys

27. O. D. Faugeras, Ed., Fundamentals in Computer Vision-An Advanced Course, Cambridge University Press, Cambridge, UK, 1983.

29. A. Sloman, Image interpretation: the way ahead?, in [81], 380-401.

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A.4. Graphics

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A.6. Perception

80. J. Beck, B. Hope, and A. Rosenfeld, Eds., Human and Machine Vision (Proceedings of a Workshop, Denver, CO, August 10-12, 1981), Academic Press, New York, 1983.

81. O. J. Braddick and A. C. Sleight, Eds., Physical and Biological Processing of Images (Proceedings of an International Symposium, London, England, September 27-29, 1982), Springer, Berlin, 1983.

D. Hardware and Software

271. M. J. B. Duff, Ed., Computing Structures for Image Processing (Proceedings of a Workshop held in Abingdon, UK, May 25-28, 1982), Academic Press, London 1983.

276. IEEE Computer Society Workshop on Computer Architecture for Pattern Analysis and Image Database Management (Pasadena, CA, October 12-14, 1983), IEEE Publ. 83CH1929-9.

D.1. Systems

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E.4. Remote Sensing, Reconnaissance, Cartography

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H. Shape and Pattern

H.1. Representation

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K. Three-Dimensional Scene Analysis

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K.1. Representation, Geometry

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1023. Panel on Solid Modeling, in [35], 163-165.

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APPENDIX E: 1979

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This report contains a list of selected publications in image understanding and computer vision. The list was compiled as part of our work for the DARPA-sponsored Autonomous IR Sensor Technology program, and the choice of references was directly influenced by the needs of that program. Therefore, emphasis has been placed on theories, techniques, and systems for interpreting complex imagery; the more classical fields of image processing, e.g., filtering, enhancement, restoration, coding, and reconstruction, have not been included. The topics of edge detection and region segmentation as well as the well-known scene analysis problems of shape recognition from stereo, shading, texture, and motion have also been excluded.

The bibliography covers the last decade (1974-1983) and is based on the yearly surveys published by A. Rosenfeld in the Journal initially called "Computer Graphics and Image Processing (CGIP)" and now "Computer Vision, Graphics, and Image Processing (CVGIP)".

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