

C.V. (Selected Items)

Arthur I. Karshmer

PERSONAL

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USA

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University of San Francisco
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San Francisco, CA 94117

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EDUCATION

Post-doctoral Hebrew University of Jerusalem
Einstein Institute of Mathematics
Computer Science Department
Jerusalem, Israel
September 1979 to August 1980

Ph. D. Computer and Information Science
University of Massachusetts at Amherst
August 1978

M.S. Computer and Information Science
University of Massachusetts at Amherst

B.A. Political Science
Rutgers University
New Brunswick, NJ

RESEARCH INTERESTS

Current: Special Devices to Support The Handicapped, Operating Systems

Ph.D.Thesis: A data encoding and decoding scheme for facilitating the transmission of computer graphics data in a computer network.

PROFESSIONAL EXPERIENCE

- 2006 - ;
Professor, Information Systems Program, University of San Francisco
- 2002 - 2006 :
Professor and Founding Chair, Department of Information Technology,
University of South Florida, Lakeland, FL
- 2001 - 2002 :
Program Director, National Science Foundation, Arlington, VA (on loan
from USF)
- 2000 - 2001 :
Visiting Professor, Computer Science, University of South Florida, Lakeland
Florida
- 1992 - 2000 :
Professor of Computer Science and Department Head, Computer Science
Department, New Mexico State University
- 1992 - 1992:
Associate Professor and Department Head, Computer Science Department,
New Mexico State University
- 1990 - 1992:
Associate Professor, Computer Science Department, New Mexico State Uni-
versity
- 1989 - 1990:
Sabbatical Leave at the Computer Science Department, University of Kaiser-
slautern, Kaiserslautern, Federal Republic of Germany
- 1987 - 1989:
Associate Professor, Computer Science Department, New Mexico State Uni-
versity, Las Cruces, NM
- 1986 - 1987:
Visiting Associate Professor, Computer and Information Science, Boston
University, Heidleberg, West Germany
- 1983 - 1986:
Associate Professor, Computer Science Department, New Mexico State Uni-
versity, University Park, NM
- 1980 - 1983:
Assistant Professor, Department of Computer Science, New Mexico State
University, University Park, N.M. 88001.
- 1979 - 1980:
Post-doctoral research fellow at the Hebrew University of Jerusalem, Israel.

Awarded a Hebrew University Fellowship to spend a year studying in Israel at the Einstein Institute of Mathematics / Computer Science Department.

1978 - 1979:

Assistant Professor, Department of Computer Science, New Mexico State University, University Park, NM.

SELECTED PUBLICATIONS

Journals – Peer Reviewed

- Powlik, J., and Karshmer, A.I., When Accessibility Meets Usability, Universal Access in the Information Society, Springer-Verlag, Volume 1, Number 3, June 2002. pp 217-222
- Jacko, J.A., Salvendy, G., Karshmer, A.I., et al, Intranets and Organizational Learning: A Research and Development Agenda, International Journal of Human-Computer Interaction, 14(1), 93-130, Springer Verlag, 2002
- Pontelli, E., Gillan, Douglas J., Gupta, G., Karshmer, Arthur I., Saad, E. and Xiong, W. (2002): Intelligent non-visual navigation of complex HTML structures. In Universal Access in the Information Society, 2 (1) pp. 56-69
- Stephanidis, C., Karshmer, A.I., et al., Toward an Information Society for All: An International Research & Development Agenda, International Journal of Human-Computer Interaction, Vol 10(2), pp 107-134, 1998.
- Karshmer, A.I., Thomas, J. N. & Kiropavic, N., New Approaches to Using Cable TV Plants to Implement Metropolitan Area Networks, Euromicro, Elsevier North Holland, 1994.
- Karshmer, A., Thomas, J., and Krivokapic, N., On implementing computer networking on existing cable TV plants: some interesting proposals, Microprocessing and Microprogramming archive Volume 40 , Issue 5 (June 1994) table of contents Pages: 355 – 373
- Karshmer, A.I., Thomas, J.N., et al., Architectural Support for Operating Systems: A Popular CISC Vs. a Popular RISC, Microprocessing and Microcomputing, The European Journal of Microcomputing, 30, (1990), 627-636.
- Karshmer, A.I., Thomas, J.N. & Phelan, J.M., TVNet II: The KEDS Protocol, Microprocessing and Microcomputing, The European Journal of Microcomputing, 30, (1990), 21-32.
- Karshmer, A.I., Phelan, J., and Thomas, J.N., TVNet: A Data and Image Delivery System Using Standard Cable T.V. Facilities, Computer Networks and ISDN Systems, Vol. 15, North Holland Publishing, pp 135-151.
- Karshmer, A.I., Davis, R.D. and Myler, H., The Architecture of An Inexpensive and Portable Talking-Tactile Terminal to Aid the Visually Handicapped, Computer Standards & Interfaces Vol. #5, 1987, North-Holland Publishing, pp 207-220.
- Karshmer, A.I. & Thomas, J.N., Computer Networks on Cable T.V Plants, IEEE Network, November, 1992.
- Karshmer, A.I., Davis, R.D. and Myler, H., An Inexpensive and Portable Talking-Tactile Terminal For the Visually Handicapped, The Journal of Medical Systems, Vol 10, No. 3,.
- Karshmer, A.I. and Wehe, A., Supporting Parallel Programming in a Distributed UNIX Environment, Interfaces in Computing, Vol. 2, No. 2, 1984, pp 109-128.

- Karshmer, A.I., DePree, D.J., and Phelan, J., The New Mexico State University Ring-Star System: A Distributed UNIX Environment, *Software Practice and Experience*. Vol. 13, No. 12, December, 1983, pp 1157-1168.
- Karshmer, A. I., Partridge, D., and Johnston, V., Exploratory Behavior Without Novelty Drive?, *The Behavioral and Brain Sciences*, Cambridge University Press, Volume 5, Number 4, December, 1982.
- Karshmer, A. I., and Lenherr, F. G., Some Design Criteria for the CORETEX Programming Language, *Systems Neuroscience*, J. Metzler, Ed., Academic Press, New York, NY, (October, 1977).
- Amari, S., Liebllich, I., and Karshmer, A. I., A Neural Model for the Handling of Phenomena Associated with Trains of Light Stimuli: An Updated Version to Fit Fusion Data, *Systems Neuroscience*, J. Metzler, ed., Academic Press, New York, NY., (October, 1977).

Invited Keynote Address

- Karshmer, A.I., And Farsi, D., Assisted & Independent Living: The User Perspective (Keynote), Dagstuhl Conference, Germany, November 2007
- Karshmer, A.I., Designing Interfaces for People with Disabilities, The Faculty of Informatics (Informatika Fakultatea) of the University of the Basque Country (Euskal Herriko Unibertsitatea) Summer School on "Design of Human-Computer Interfaces for Disabled People", August 1-5, 1994 Donostia-San Sebastian (Spain).

Invited Special Session

- Nehmer, J., Karshmer, A., Becker, M., and Lamm, R., Living Assistance Systems: An Ambient Approach, *Proceedings of the 28th International Conference on Software Engineering*, Shanghai, May, 2006

Edited Books

- Kizito Mukasa, Andreas Hilzinger and Arthur Karshmer (Eds.), *International Workshop on Intelligent User Interfaces for Ambient Assistive Living (Proceedings)*, ISBN 978-3-8167-7521-8, January 2008
- Klaus Miesenberger, Joachim Klaus, Wolfgang Zagler and Arthur Karshmer (Eds.), *Computers Helping People with Special Needs*, Springer-Verlag, LNCS 5105, ISBN 978-3-540-70539-0, July, 2008
- Arthur Karshmer, Juergen Nehmer, Hartmut Raffler and Gerhard Troester (Eds.), *Assisted Living Systems - Models, Architectures and Engineering Approaches*, ISSN 1862-4405, November, 2007
- Klaus Miesenberger, Joachim Klaus, Wolfgang Zagler and Arthur Karshmer (Eds.), *Computers Helping People with Special Needs*, Springer-Verlag, LNCS 5105, ISBN 978-3-540-36020-4, July, 2006
- Arthur Karshmer and Juergen Nehmer (Eds.), *Operating Systems of the 90s and Beyond*, Springer-Verlag, July, 1991

Book Chapter – Peer Reviewed

- Gupta, G., Karshmer, A.I., and Pontelli, E., Mathematics and Accessibility: a Survey, Invited Chapter, *The Universal Access Handbook*, LEA Publishing, in press.

Conference Papers – Peer Reviewed

- Karshmer, A.I., AutOMathic Blocks: The Next Step, CSUN Conference, March 2008
- Karshmer, A., Access to Mathematics and science, ICCHP 2008.
- Karshmer, A.I. and Farsi, D., Manipulatives in the History of Teaching: Fast Forward to AutOMathic Blocks for the Blind, ICCHP Conference, Linz, Austria, July, 2008.
- Karshmer, A.I., Ejnoui, A., and Raisamo, R., Learning Math with Computer Based Manipulatives, The CSUN Conference, Los Angeles, California, March, 2007
- Gopal, D., Wang, O., Gupta, G., Sachin, V., Guo, H-F., Karshmer, A., Winsight: Towards completely automatic back-translation of Nemeth Code, HCI (7), Beijing, 2007, pp 309-318
- Loeding, B., Sarkar, S., Parashar, A., and Karshmer, A., Progress in Automated Computer Recognition of Sign Language, Proceedings of ICCHP 2004, pp 1079-1087
- Karshmer, A.I., Daultani, P., and McCaffrey, M., AutOMathic Blocks ñ An Automated Systems to Teach Math to K-12 Children with Severe Visual Impairment Allowing Both Physical and Haptic Interaction with An Automated Tutor, Proceedings of the Learning with Disabilities Conference, Dayton, Ohio, July, 2007
- Karshmer, A.I., and Farsi, D., Access to Mathematics by Blind Student: A Global Problem, Proceedings of the WMSCI 2007 Conference, Orlando, Florida, July, 2007
- Gopal, D., A, Karshmer, A.I., Winsight: Towards Completely Automatic Backtranslation of Nemeth Code, Proceedings of HCI International, Springer Verlag, Beijing, July, 2007
- Stanley, P., and Karshmer, A., Translating MathML into Nemeth Braille Code, Proceedings of the International Conference on Computers Helping People, Linz, Austria, 2006
- Ruiduo, Y., Sarkar, S., Loeding, B., and Karshmer, A., Efficient Generation of Large Amounts of Training Data for Sign Language Recognition: A Semi-Automatic Tool, Proceedings of the International Conference on Computers Helping People, Linz, Austria, 2006
- Karshmer, A., Lamm, R., Karshmer, J., and Archambault, D., Adapting Assistive Technologies For Use By The Elderly, International Conference on Aging, Disability and Independence, St. Petersburg, Fl, February, 2006
- Stanley, P., Bledsoe, C., and Karshmer, A., Verbally Rendering Math Statements with the MathGenie Accessibility Software for the Print Impaired, Florida Tech Transfer Conference, May, 2005
- Karshmer, A., Bledsoe, C., and Stanley, P., The Architecture of a Comprehensive Equation Browser for the Print Impaired, Proceedings of the IEEE Symposium on Visual Languages and Human Centric Computing, Dallas Texas, September, 2005
- Stanley, Paul and Karshmer, Arthur, I., Using Scalable Vector Graphics in the Instruction of Mathematics to the Visually Impaired Student, The International Conference for Computers Helping People, Paris, July, 2004.
- Stanley, Paul and Karshmer, Arthur, I., Using Scalable Vector Graphics in the Instruction of Mathematics to the Visually Impaired Student, The International Conference for Computers Helping People, Paris, July, 2004.
- Karshmer, Judith, F., and Karshmer, Arthur, I., A Computer-Based Self Health Monitoring System for the Elderly in a Low Income Housing Environment, The International Conference for Computers Helping People, Paris, July, 2004.
- Karshmer, A., Gupta, G., Annamalai, N., et al., UMA: A System for Universal Mathematics Accessibility, Proceedings of the ASSETS Conference, 2004
- Fitzpatrick, D., and Karshmer, A., Multi-modal Mathematics: Conveying Math Using Synthetic

- Speech and Speech Recognition, Proceedings of ICCHP 2004, pp 644-647
- Karshmer, A., Bledsoe, C., and Stanley, P., The Architecture of a Comprehensive Equation Browser for the Print Impaired, The International Conference for Computers Helping People, Paris, July, 2004
- Gillan, Doug, Barazza, Paula, Karshmer and Pazuchanics, Skye, A Cognitive Analysis of Equation Reading Applied to the Development of Assistive Technology for Visually-Impaired Students, HFES 48th Annual Meeting, Sheraton New Orleans Hotel, New Orleans, Louisiana, September 20-24, 2004.
- Karshmer, Arthur I., Gupta, G., Pontelli, E., Miesenberger, K., Ammalai, N., Gopal, D., Batusic, M., Stoeger, B., Palmer, B. and Guo, H.-F. (2004): UMA: a system for universal mathematics accessibility. In: Sixth Annual ACM Conference on Assistive Technologies 2004. pp. 55-62.
- Barraza, P., Gilan, D., Karshmer, A., and Pazuzchanics, S., A Cognitive Analysis of Equation Reading Applied to the Development of Assistive Technology for Visually-Impaired Students, to Appear in the proceedings of the 48th Human Factors and Ergonomics Conference Proceedings, New Oeleans, September 20-24, 2004.
- Archambault, A., Miesenberger, K., Karshmer, A., Gupta, G., Pontelli, E., and Fitzpatrick, D., Towards A Universal Maths Conversion Library, The International Conference for Computers Helping People, Paris, July, 2004
- Karshmer, A.I., and Gillan, D., How well can we Read Equations to Blind Mathematics Students: Some Answers from Psychology , Proceedings of the 2003 Human Computer Interface International Conference, Crete, Greece, July, 2003.
- Karshmer, A.I., and Gillan, D., How well can we Read Equations to Blind Mathematics Students: Some Answers from Psychology , Proceedings of the 2003 Human Computer Interface International Conference, Crete, Greece, July, 2003.
- Armitage, W., and Karshmer, A., Florida's universities tackle the IT curriculum, IEEE IT Professional Journal, Vol. 5, October 2003, pp. 37-43.
- Annamalai, N., Gopal, D., Gupta, G., Guo, H., and Karshmer, A.I., INSIGHT: A Comprehensive System for Converting Braille-based Mathematical Documents to LaTeX, Proceedings of the 2003 Human Computer Interface International Conference, Crete, Greece, July, 2003.
- Pontelli, E., Karshmer, A.I., Gupta, G., Gillan, D., Xiong, V., & Saad., E, Navigation of HTML tables, frames, and XML fragments, the Proceedings of the ASSETS 2002 Conference, Edinburgh, Scotland, July, 2002
- Karshmer, A., Gupta, G., and Gillan, D., Archtecting and Auditory Browser for Navigating Mathematical Expressions, Proceedings of ICCHP 2002, pp 477-485
- Pontelli, E., Gillan, Douglas J., Xiong, W., Saad, E., Gupta, G. and Karshmer, Arthur I. (2002): Navigation of HTML tables, frames, and XML fragments. In: Fifth Annual ACM Conference on Assistive Technologies 2002. pp. 25-32.
- Karshmer, A.I., Math and Blind Students: A Special Thematic Session, Proceedings of the ICCHP 2002 Conference, Linz, Austria, July 17, 2002, Published in the Springer-Verlag Lecture Notes in Computer Science
- Karshmer, A.I., Gupta, G., and Gillan, D., Architcting an Audio Browser for Navigating Mathematical Equations, Proceedings of the ICCHP 2002 Conference, Linz, Austria, July 17, 2002, Published in the Springer-Verlag Lecture Notes in Computer Science
- Karshmer, A.I., and Bledsoe, C., Access to Mathematics by Blind Students, Proceedings of the

- BrailleNet 2002 Conference, Paris, France, May 3, 2002
- Karshmer, A., Pontelli, E., et al, Semantics-Based Filtering: Logic Programming's Killer App, Practical Aspects of Declarative Languages Conference, 2002, pp 82-100
- Karshmer, A.I., Gupta, G., Pontelli, E., Miesenberger, K., and H-F Guo, The Development of a Tool to Enhance Communications Between Blind and Sighted Mathematicians, Students and Teachers: A Global Translation Appliance, Proceedings of the HCI Conference, New Orleans, 2001
- Karshmer, A.I. and Gharawi, M., Computer Speech for Teaching Mathematics to the Blind, Proceedings of TET International 2001, Prague, Czech Republic, May 2001
- Pontelli, E., Xiong, W., Gupta, G. and Karshmer, Arthur I. (2000): A Domain Specific Language Framework for Non-Visual Browsing of Complex HTML Structures. In: Fourth Annual ACM Conference on Assistive Technologies 2000. pp. 180-187.
- S Cooper, T Bowman, and A Karshmer, "Session Traces: An Enhancement to Network Simulator," Proceedings of the IEEE IPCCC'99 Conference, Phoenix, AZ, Feb, 1999
- Karshmer, A.I., Gupta, G., Geiger, S., and Weaver, C., Reading and Writing Mathematics: The MAVIS Project, BIT (Behaviour & Information Technology), January 1999
- Karshmer, A., Pontelli, E., and Gupta, G., Software Technology and Computer Interfaces for the Disabled: Non-Visual WWW, Proceedings of HCI, 1999, pp 792-796
- Karshmer, A.I., Gupta, G., Geiger, S., and Weaver, C., The NMSU MAVIS Project: A Project Preview, Proceedings of Assets 98, Marina del Rey California, April, 1998
- Karshmer, A.I., Interdisciplinary Efforts to Facilitate the Production of Tools Support the Disabled and Elderly in the Information Society, Invited Presentation, Human Computer Interaction International Conference, San Francisco, September, 1997.
- Karshmer, A.I., Navigating the Graphical User Interface: A Case for Interdisciplinary Research to Support People with Special Needs, Proceedings of the ICCHP Meeting, Vienna, Austria, July, 1996.
- Karshmer, A.I. and Wood, D., Integrating the Visually Impaired Computer User Into Information-Based Workplace, The Finish National Conference on People in the Workplace, Helsinki, August, 1996.
- Karshmer, A.I., Navigating the Graphical User Interface (GUI) by the Visually Impaired Computer User, Proceedings of the Sixth International Conference on Human-Computer Interaction, Tokyo, July, 1995, pp. 149-154, Vol. 1.
- Karshmer, A., and Kaugars, K., Equal access to information for all: making the world of electronic information more access the handicapped in our society ACM SIGCAPH Computers and the Physically Handicapped archive Issue 52-53 (November 1995) table of contents Pages: 11 – 23
- Karshmer, A.I., and Kaugars, K., A Tonally-Based Menu System for Use by the Visually Impaired, Proceedings of the ASSETS'94 Conference, Los Angeles, October, 1994.
- Karshmer, A.I., Adapting Graphical User Interfaces for Use by the Visually Impaired, Computers and The Handicapped, Springer-Verlag Lecture Notes in Computer Science, 1994.
- Karshmer, A., Ogden, B., Kaugars, k., and Reiswig, G., Adapting graphical user interfaces for use by visually handicapped users, Proceedings of the 4th International Conference on Computers for Handicapped Persons, Vienna, Austria, 1994, pp 16-24.
- Karshmer, A.I. & Brawner, P., Evaluation of Non-Sighted Performance in A Hierarchical Knowledge Structure,. in the Proceedings of The Workshop on Computers and The

Handicapped

- Karshmer, Arthur I., Brawner, Pres and Reiswig, George (1994): An Experimental Sound-Based Hierarchical Menu Navigation System for Visually Handicapped Use of Graphical User Interfaces. In: First Annual ACM Conference on Assistive Technologies 1994. pp. 123-128.
- Karshmer, A.I., & Oliver, R.L., Special Computer Interfaces for the Visually Handicapped: FOB The Manufacturer, Human-Computer Interaction, Bass, L.J. et al.(Eds), Springer-Verlag, 1993.
- Karshmer, A.I., Thomas, J.N., et al., Architectural Support for Operating Systems in Five Modern Microprocessors, The Proceedings of the 7th Symposium on Microcomputer and Microprocessor Applications, Budapest, April, 1992.
- Karshmer, A.I., Hartley, R.T. & Paap, K., Using Sound and Sound Spaces to Adapt Graphical Interfaces for Use by the Visually Handicapped, The Proceedings of The 3rd. International Conference on Computing and the Handicapped Person (ICCHP), July 1992, Vienna, Austria.
- Karshmer, A.I., TVNet: A Medical Image and Data Delivery System Using Standard Cable TV Facilities, The proceedings of the American Medical Informatics Society 1992 Spring Conference, Portland, May, 1992
- Karshmer, A.I. and Yan, R., A CATV Based Metropolitan Area Network Using Distributed Switching, EuroMicro-92, Paris, 1992.
- York, B.W. & Karshmer, A.I., Tools to Support Blind Programmers, appearing in Visual Programming Environments, edited by E.P. Glinert, IEEE Computer Society Press (1991).
- Karshmer, A.I. & Thomas, J.N., Are Operating Systems at RISC?, Operating Systems of the 90s and Beyond: An International Workshop, Dagstuhl, Germany, July 8-12 1991.
- Karshmer, A. & Nehmer, J. (Eds), Operating Systems of the 90s and Beyond, Springer-Verlag, Heidelberg, December, 1991.
- Karshmer, A.I. and Thomas, J.N., Inherent Problems in Implementing Cable TV Based Metropolitan Area Networks, The Proceedings of The 22nd Hawaii International Conference on Systems Science.
- York, B.W. and Karshmer, A.I., An Overview of T3 - PBE, SIGCAPH Newsletter, ACM Press, Number 41, January, 1989.
- Dorfman, S. B. and Karshmer, A.I., Performance Considerations in Local Area Computer Networks,í Proceedings of The 18th Annual Hawaii International Conference on Systems Science, Honolulu, January, 1985.
- Karshmer, A.I., and Wehe, A., pc: A Parallel C Language,í Proceedings of the Seventeenth Annual Hawaii International Conference on System Sciences, Honolulu, Hawaii, January 1984.
- Karshmer, A.I., Phelan, J., Kempton, B. and DePree, D.J., The New Mexico State University Distributed UNIX System: Evaluation and Extension, Proceedings of the 16th Annual Hawaii International Conference on Systems Science, January, 1983.
- Karshmer, A.I., Allan, D., and Anderson, D., Virtualí Craniofacial Surgery Using Interactive Computer Graphics: A Pilot Study, The Proceedings of The 1983 National Computer Graphics Association Conference, Chicago, June, 1983.
- McHam, J.N., Karshmer, A.I., and Shaw, M., An Interactive Method of Teaching Blood Cell Identification: Evaluating the System, The Proceedings of the IEEE Computer Society International Symposium on Medical Imaging and Image Interpretation, Berlin, October,

- 1982.
- McHam, J. N., Karshmer, A. I., and Shaw, M., Teaching Blood Cell Identification Using Interactive Color Computer Graphics, Proceedings of the Pattern Recognition and Image Processing Conference, Las Vegas, NV, (June 1982).
- Barak, A. B., Steinberg, G., Shapir, A., and Karshmer, A. I., A Modular Distributed UNIX, Proceedings of the 14th Annual Hawaii International Conference on System Science, Honolulu, Hawaii, (January 1981).
- Tate, S., and Karshmer, A. I., GRAFIX: A Graphics Subroutine System for The Terak 8510/a Graphics Computer, Computer Science Department Technical Report, Computer Science Department, New Mexico State University, University Park, NM, (October 1980).
- Barak, A. B., Steinberg, G., and Karshmer, A. I., Modular Unix, Department of Computer Science Technical Report #50, The Hebrew University of Jerusalem, Jerusalem, Israel, (June 1980).
- Karshmer, A. I., Graphical Data Encoding Using Frame-to-Frame Changes, Computer Science Department Technical Report #NMSU-TR-79-01, Computer Science Department, New Mexico State University, University Park, NM, (February, 1979).
- Karshmer, A. I., A Motion Directed Picture Segmentation System to Support Network Graphics Applications, Proceedings of the 1979 IEEE Pattern Recognition and Image Processing Conference, Chicago, Il., (1979).
- Prager, J., Karshmer, A. I., and York, B. W., An Interactive Graphical Editing System for Refresh Graphics Devices, COINS Technical Report, Computer and Information Science Department, University of Massachusetts at Amherst, Amherst, Ma., (1978).
- Karshmer, A. I., and Arbib, M. A., Editors, Computers in the Neurosciences, Special Issue of The Brain Theory Newsletter, Amherst, Ma., (May 1978).
- Karshmer, A. I., Network Computer Graphics, Proceedings of the 1977 ACM Computer Science Conference, Chicago, Il., (1977).
- Karshmer, A. I., CSNLIB: A Graphics Subroutine System for the PDP-11 Computer, COINS Technical Report #77-12, Computer and Information Science Department, University of Massachusetts, Amherst, Ma., (1977).
- Karshmer, A. I., A Picture Segmentation Approach to Facilitating Computer Graphics Transmission Over Low Bandwidth Telephone Lines, Proceedings of the 1977 IEEE Workshop on Picture Data Description and Management, Chicago, Il., (1977).
- Karshmer, A., and Lenherr, F., Some Design Criteria for the CORETEX Language String, the NEWSLETTER OF THE ASSOCIATION FOR COMPUTATIONAL LINGUISTICS VOLUNE 14 - NUMBER 7 DECEMBER 1977
- Karshmer, A. I., A Graphics Subroutine System for Supporting Highly Interactive Graphical Applications, Center For Systems Neuroscience Technical Report #76-1, Computer and Information Science Department, University of Massachusetts, Amherst, Ma., (October, 1976).
- Karshmer, A. I., Front End Processors, The Encyclopedia of Computer Science, A. Ralston and C. L. Meek, Eds., Petrocelli/Charter, New York, NY., (1975).
- Amari, S., Lieblich, I., and Karshmer, A. I., A Neural Model for the Handling of Phenomena Associated with Trains of Light Stimuli, The Brain Theory Newsletter, Vol. 1, No. 2, Amherst, Ma., (December, 1975).
- Lee, J. A. N., Beckhardt, S. R., and Karshmer, A. I., BASIC Specifications, COINS Technical Report #73A-I.I, Computer and Information Science Department, University of

Massachusetts, Amherst, Ma., (1973).
Lee, J. A. N., Beckhardt, S. R., and Karshmer, A. I., A Candidate Standard for Fundamental BASIC, American National Standards Institute Report #X3-Jx/74-72 (Originally published in National Technical Information Service Report #NBS-GRS 73-17, (1973)).

Fellowships & Awards

Fulbright Fellowship to Finland – 2007
Fulbright Fellowship to France – 2005
Fulbright Fellowship to Ireland – 2004
Lady Davis Post Doctoral Fellowship - Hebrew University, Israel
Deutscher Akademischer Austausch Dienst (DAAD) Fellowship – University of Kaiserslautern, Germany
Best Paper Award - East West HCI Conference, Moscow, Russia
L'électricité de France Fellowship – summer fellowship

SELECTED INTERNATIONAL COLLOQUIA

Invited Speaker, @Science Meeting on Math and the Blind, Paris, 2008

Invited Speaker, @Science Meeting on Math and the Blind, Linz, Austria, 2008

Invited Speaker, University of Stuttgart, Computer Science Department, Stuttgart Germany, June 2008.

Keynote Speaker, Dagstuhl Meeting on Aging and Ambient Intelligence, November, 2007

Invited Speaker, Mathematik im wissenschaftlichen Kontext für blinde, Karlsruhe, Germany, November, 2007

Keynote Speaker, BrailleNet Conference, Paris, May, 2002

Invited speaker, Puerto Rico EPSCOR Meeting, Fajardo, Puerto Rico, May, 2000

Invited speaker, Telecommunications for the Disabled, Lima, Peru, May, 1999

Founding Participant on International Committee to Support “Access for All” initiative. Special White Paper published in the International Journal of Human-Computer Interfaces Feb., 2000

Invited speaker at HCI '95 - Yokohama, Japan, July, 1995

Using Cable Television Plants to Support Generalized Information Transfer, Computer Science Department, Technical University of Madrid, Madrid, Spain, July 1993.

New Directions in Metropolitan Area Networking, Computer Science Department, University of York, Heslington, Yorks, U.K. (June, 1990).

Interactive Tools for the Visually Handicapped Computer User, Institut National de la Sante et de la Recherche Medicale, Hopital Henri Ruselle, Paris (April, 1990).

Prospects for Cable Television and Computer Networking in Germany, Computer Science Department, University of Kaiserslautern, Kaiserslautern, Federal Republic of Germany (October, 1989).

Using Standard Cable T.V. Facilities to Implement a Municipal Area Network, Computer Science Department, University of Hong Kong, Hong Kong (November, 1988).

Trends in Operating System Support in Computer Architecture, Computer Science Department, Tam Kang University, Taipei, Taiwan (November, 1988).

The New Mexico State University Ring-Star System, Consiglio Nazionale delle Ricerche, Istituto CNUCE, University of Pisa, Pisa, Italy (July, 1984).

Distributed Processing Research at New Mexico State University, Computer Science Department, University of York, Heslington, Yorks, U.K. (July, 1982).

An Adaptive Encoding System for Transmission of Computer Graphics in a Low Speed Communications Environment, Computer Science Department, Einstein Institute of Mathematics, The Hebrew University of Jerusalem, Jerusalem, Israel (October, 1979).

Minicomputer Systems in Undergraduate Education, part of a professional development course given at the Instituto Tecnologico Regional de Veracruz, Heroica Veracruz, Mexico (August, 1979).

Frame-to-frame Encoding Techniques, Bell Northern Communications Laboratories, Montreal, Canada (November, 1978).

RESEARCH FUNDING

Funded Projects:

National Science Foundation:

Co-PI, BPC Program, National Science Foundation (Pending)

Project Director/PI – NSF Workshop on Broadening Participation in Computing
(Completed)

Consultant (paid): NSF/SBIR Phase I Grant – Dallas, Texas **(Recently Completed)**

Consultant (paid): NSF/SBIR Phase II Grant – Dallas, Texas **(Declined)**

Consultant (paid): NSF MII Grant – Florida International University (**Pending**)
Consultant (paid); NSF CISE Grant – University of South Florida (**completed**)
Project Director/PI - WWW Access for the Blind and Visually Impaired (\$600,000)
(Completed)
Project Director/PI - MAVIS: Mathematics Accessible to Visually Impaired Students
(\$460,000) (**Completed**)
Project Director/PI – NSF vBNS - A Connection for New Mexico State University
(\$750,000) (**Completed**)
Project Director/PI - NSF MI Infrastructure Program (\$1,500,000) (**Completed**)

U.S. Department of Education:

Project Director/PI – The AutoMathic Blocks System, Submitted to NIDRR (Declined)
Co-PI – Math and the Visually Impaired, with The Smith-Kettlewell Eye Research Institute
(Declined)
Project Director/PI - Universal Braille Translation, funded by NIDRR (\$427,000)
(Completed)
Project Director/PI - Graduate Assistantships in Areas of National Need (Complete)
(\$360,000) (**Completed**)

Others:

National Security Agency, “Phase II of a Computerized Assistant for UNIX System Administrators,” with J. Reinfelds, \$85,000.

Deutscher Akademischer Austauschdienst, Summer Fellowship to complete work on a book entitled *Operating Systems of the 90s and Beyond*, edited by A. I. Karshmer and J. Nehmer, to be published by Springer-Verlag (1991)

National Science Foundation - “Operating Systems of The 90s And Beyond,” an international workshop, requesting support for international travel for workshop participants, \$12,800, (1991)

IBM Germany, Open Software Foundation & Informatik Society of Germany, support for an international workshop entitled, “Operating Systems of the 90s And Beyond,” organized with J. Nehmer of The University of Kaiserslautern, Federal Republic of Germany, DM 30,000, (1990-1991)

American Telephone and Telegraph (AT&T) Foundation, with K. Paap “Link-weighted Networks to Represent Information for the Visually Handicapped Scientist.” \$10,000 for one year. (1990-1991)

National Security Agency, “Computerized Assistance for UNIX Systems Administrators,” with J. Reinfelds, one year funding, \$80,000. (1990-1991)

National Security Agency, “A High Performance Text and Documentation Preparation System,”

with J. Reinfelds, one year funding, \$80,000 (1990-1991)

National Science Foundation Institutional Infrastructure Program - "A Parallel Processing Laboratory Using a Tightly Coupled Computing System", written with various Departmental colleagues. The grant is for \$1,320,000 over a five year period. (1989)

American Telephone and Telegraph (AT&T) Foundation, with D. Dearholt, "Link-weighted Networks to Represent Information for the Visually Handicapped Scientist." \$10,000 for one year. (1989)

LIONS Club International Foundation - "Lessening Input/Output Dependencies for the Visually Impaired Computer User". The Request is for \$35,000 over a one year period.

Verification of Network Simulations, National Science Foundation, CRE Grant, with Departmental Colleagues, \$180,000 (1987).

The Role of The Workstation in Research and Teaching, funded by AT&T, \$125,000 equipment grant (1987)

An Inexpensive and Portable Talking-Tactile Terminal for the Visually Handicapped, funded by the Computing Research Laboratory, New Mexico State University. Project funding = \$25,000 (1985-86).

Portability Problems in Hardware and Software, A Grant from The Department of Defense, \$30,000, Spring-Summer, 1985.

Specification Methodologies in Distributed Processing, see item below, 1985-1986 funding \$65,000.

UNIX and networking. A grant from Digital Equipment Corporation to investigate such an interface. Funding is in the form of a \$71,000 equipment grant. (1984)

Specification Methodologies in Distributed Processing. Funded by the Computing Research Laboratory, New Mexico State University. Project funding is \$65,000 per year. (1984 & 1985)

The Use of Microprocessors in Computer Science Education: Research and Teaching Applications. Equipment Grant from Digital Equipment Corporation, Maynard, Massachusetts. Total Funding = \$52,000. The Equipment takes the form of a gift to the University. (July 1981)

Research in Distributed Processing, United States Air Force Office of Scientific Research. Research effort in conjunction with The Hebrew University of Jerusalem. (1981)

Using Interactive Computer Graphics to Model and Display the Results of Craniofacial Surgical Procedures: A Pilot Study, with Daniel Allan, M.D., Funded by The Plastic Surgery Educational Foundation. (1982)

The Creation of a Ring-Star Computer Network, mini-grant funded by The New Mexico State University Arts and Science Research Center, Total Funding = \$1,800. (September, 1981)

Lady Davis (Hebrew University) Post Doctoral Fellowship to spend a year at The Hebrew University of Jerusalem, Israel, approximately \$15,000.

Travel and Living Expense Grant from The French National Electricity Company to take part in a Distributed Processing Workshop, Total Funding = \$2,000, Paris, France, (July, 1981).

Pictures as a Function of Sound. New Mexico State University Mini-grant for a joint project with the NMSU Art Department. Total Funding = \$1800. (April 1981).

Development of a Distributed Intelligence Color Graphics System, Funded by the National Science Foundation, Total Funding = \$44,000, (March, 1979).

Development of an Expanded Computing Facility for Teaching and Research, Funded by the Arts and Science Research Center, New Mexico State University, Total Funding = \$19,000, (June 1979).

An Expanded Role for Micro Processor Based Computing Equipment, Funded by The New Mexico State University Research Center, Total Funding = \$2,500, (January, 1979).

Development of Basic Computer Graphics Software Support, Funded by the New Mexico State University Research Center, Total Funding = \$2,000, (September, 1979).

PROFESSIONAL CONFERENCE ORGANIZATIONAL ACTIVITIES

Co-Organizer, Dagstuhl Conference on Assisted Living and Ambient Intelligence, Dagstuhl Germany, November, 2007

Co-Organizer, International Workshop on Intelligent User Interfaces for Ambient Assisted Living, Canary Islands, Spain, January, 2008

Program Chair, The CSUN Conference, Los Angeles, March, 2007 and March, 2008

Program Chair, International Conference on Computers Helping People (ICCHP - 2008), Linz, Austria, July, 2008

Program Chair, International Conference on Computers Helping People (ICCHP - 2006), Linz, Austria, July, 2006

Co-Chair, International Conference on Computers Helping People (ICCHP - 2004), Paris, France, July, 2004

Co-Chair, International Conference on Computers Helping People (ICCHP - 2002), Linz, Austria, July, 2002

Co-Chair, International Conference on Computers Helping People (ICCHP - 2000), Karlsruhe, Germany, July, 2000

General Chair, Association for Computing Machinery (ACM), ASSETS Conference, Marina del Rey, California, April, 1998

Program Committee, **1994 East-West Human Computer Interface Conference** Moscow, Russia

Co-organizer of **Operating Systems of the 90s and Beyond**, an international workshop to be held in Dagstuhl Castle, Germany, July 1991.

Session organizer, **ACM Microcomputer Applications Conference**, Washington, D.C., July, 1990.

Track Organizer for distributed systems, **Hawaii International Conference on Systems Science**, Honolulu, January, 1985.

SELECTED OTHER PROFESSIONAL EXPERIENCE

2001 -

Director: International Group for Universal Mathematics Access (iGroup UMA) with members in The U.S., Austria, France, Ireland, Holland and Japan

2000 -

Invited speaker, Puerto Rico EPSCOR Meeting, Fajardo, Puerto Rico, May, 2000

Invited speaker, Telecommunications for the Disabled, Lima, Peru, May, 1999

2000 -

Founding Participant on International Committee to Support Access for All initiative. Special White Paper published in the International Journal of Human-Computer Interfaces Feb., 2000

2000 -

Editorial Board, Universal Access in the Information Society, Springer-Verlag

1997 - 2000:

Editor, ACM SIGCAPH (Special Interest Group on People with Handicaps) Newsletter

1997 - 2000:

Appointed by the Governor of New Mexico to the Advisory Council for the Commission for the Blind

July 1993:

Invited by the European Community to teach a course on disabilities and solutions in Spain - 1993

July 1992 - August 1992:

DAAD (German) Fellowship to work with a colleague in Germany

April 1990 - August 1990:

Visiting Professor, University of York, Heslington, York, UK

August 1989 - April 1990:

Visiting Professor at the University of Kaiserslautern, Federal Republic of Germany

August 1986 - August 1987:

Visiting Associate Professor at Boston University, Heidelberg, Federal Republic of Germany.

July - August 1984:

Visitor at the Consiglio Nazionale delle Ricerche, Istituto CNUCE, Pisa, Italy and The Universita Degli Studi di Firenze, Florence, Italy

June - August 1982:

Visiting Scientist at the Computer Science Department, Distributed Processing Group, University of York, Heslington, York, England

July - August 1981:

Ecole D'Ete D'Informatique, Breau-sans-nappe, France. Summer school session on distributed processing.

CONSULTING ACTIVITIES

Over the past several years I have developed and presented a number of professional development courses for industry, the United States and Mexican Governments as well as the European Community.

OTHER PROFESSIONAL ACTIVITIES (Past and present)

Member, Advisory Board, CSUN Conference

Program Chair, CSUN conference

Program Chair, ICCHP Conference

Member of Sigma Xi

Member, Editorial Board, Universal Access in the Information Society

Member of ACM

Member IEEE Computer Society

Member of Editorial Board, Universal Access in the Information Society, Springer-Verlag

Member of the Editorial board of The SISTM Quarterly

Member of the Editorial Board of Cognition and Brain Theory
Reviewer for ACM Computing Reviews
Reviewer for IEEE Computer
Reviewer for Digital Press