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**Massachusetts Institute of Technology (MIT)**
**Senior Research Scientist**
**Associate Director, MIT Media Lab**
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## Education

École Polytechnique Fédérale de Lausanne (EPFL), Switzerland,
PhD, Electrical Engineering, 1995

MIT, Master of Science, Computer Graphics, 1978

MIT, Bachelor of Science, Electrical Engineering, 1971

## Massachusetts Institute of Technology (MIT, a teaching and research university)

Media Laboratory, Associate Director, 2008-present

Media Laboratory, Associate Director, 1987-2000

Massachusetts Institute of Technology, Senior Research Scientist, 2000-present

Media Laboratory, Graduate Officer, Media Arts and Sciences, 2002-2007

Massachusetts Institute of Technology, Principal Research Scientist, 1995-2000

Media Laboratory, Associate Director and Lecturer, 1987-2000

Media Laboratory, NEC Career Development Professor of Computers and Communications, 1985-1986

Architecture Machine Group, Associate Professor, 1983-1987

Architecture Machine Group, Assistant Professor, 1980-83

Architecture Machine Group, Research Associate, 1977-80

Architecture Machine Group, Research Assistant, 1976-77

Architecture Machine Group, Technical Instructor, 1975-76

Architecture Machine Group, Technical Assistant, 1971-75

## Other Professional Experience

*Frontiers in Blockchain*, Associate Editor, 2018-2020

*IEEE Blockchain Newsletter* Editorial Board, 2018-2020

Dell EMC Technology Advisory Board, 2013-2020

Member, Nokia Siemens Networks, now Nokia, Customer Advisory Board, 2013-2015



Amazon Web Services
EXHIBIT 1004

Diamond Management & Technology Consultants (PwC since 2012) Fellow, 1999-present

Nortel Visiting Fellow, 2007-2008

École Polytechnique Fédérale de Lausanne, Switzerland,
Visiting Professor of Electrical Engineering, 1995

## Publications

*"Algorithmic Mirror: Designing an Interactive Tool to Promote Self-Reflection for YouTube Recommendations,"* G. Agarwal, K. Dunnell, A. Lippman, CHI 2025 [in submission].

*"From RAGs to RICHES: Augmenting Retrieved Content with Interactive Visualizations to Promote User Agency in Exploration,"* G. Agarwal, K. Dunnell, A. Lippman, CHI 2025 [in submission].

*"OpenOpenAI and Alternate Altman: Democratizing the Future of AI through Speculative Participatory Media,"* G. Agarwal, K. Dunnell, P. Pataranutaporn, A. Lippman, P. Maes. Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS), December 2024.

*"Form Forge: Latent Space Exploration of Architectural Forms via Explicit Latent Variable Manipulation,"* K. Dunnell, A. Lippman, 15th International Conference on Computational Creativity, June 2024.

*"AI-Generated Media for Exploring Alternate Realities,"* K. Dunnell, G. Agarwal, P. Pataranutaporn, A. Lippman, P. Maes, Computer Human Interaction (CHI) Conference, May 2024.

*"Invertable Frowns: Video-to-Video Facial Emotion Translation,"* I. Magnusson, A. Sankaranarayanan, A. Lippman, Association for Computing Machinery (ACM) proceedings and Digital Library, September 2021.

*"The Presidential Deepfakes Dataset,"* A. Sankaranarayanan, M. Groh, R. Picard, A. Lippman, IJCAI Workshop on Adverse Impacts and Collateral Effects of Artifical Intelligence Technologies, August 2021.

"*MedRec: A Network for Personal Information Distribution*," A. Lippman, A. Cameron, K. Retzepi, N. Nchinda, ICNC 2019 Technical Program, Honolulu, HI, February 2019.

"*Bitcoin and the Myth of Decentralization: Socio-technical Proposals for Restoring Network Integrity*," A. Ekblaw and A. Lippman, IEEE SASO (Self-Adaptive Self-Organizing Systems), *Foundations and Applications of Self* Systems, IEEE International Workshops,* IEEE, 2016.

"*8K Time into Space: Web-based Interactive Storyboard with Playback for Hundreds of Videos*," H. Ohmata and A. Lippman, 2016 IEEE International Symposium on Multimedia (ISM), San Jose, CA, December 2016.

"*MedRec: Using Blockchain for Medical Data Access and Permission Management*," A. Azaria, A. Ekblaw, T. Vieira, A. Lippman. Second International Conference on Open and Big Data (OBD 2016), IEEE, 2016.

"*Five Principles for an Open Internet*," editorial, *The Boston Globe*, July 30, 2014.

"*CoCam: A collaborative content sharing framework based on opportunistic P2P networking*," E. Toledano, D. Sawada, A. Lippman, H. Holtzman, F. Casalegno. Consumer Communications and Networking Conference (CCNC), 2013 IEEE, January 2013.

"*Barter - Mechanism Design of A Market-incented Wisdom Exchange for Organizations and Communities*," D. Shen, M. Van Alstyne, A. Lippman. Workshop on Social Computing and User Generated Content, ACM Conference on Electronic Commerce, San Jose, CA, June, 2011.

"*Barter - Mechanism Design for a Market Incented Wisdom Exchange*," D. Shen, M. Van Alstyne, A. Lippman, H. Benbya. ACM Conference on Computer Supported Cooperative Work (CSCW), Seattle, WA, February, 2012.

"*Design of Currency, Markets, and Economy for Knowledge*," D. Shen, A. Pentland, M. Van Alstyne, A. Lippman. "Design of Currency, Markets, and Economy for Knowledge" Workshop on Information in Networks (WIN), New York, NY, September, 2012.

"*The Impacts of Just-In-Time Social Networks on People's Choices in the Real World*," K.H. Lee, A. Lippman, A. Pentland, E. Dugundji. The Third IEEE International Conference on Social Computing. October 9-11, 2011.

"*The Glass Infrastructure: Using Common Sense to Create a Dynamic, Place-Based Social Information System*," C. Havasi, R. Borovoy, B. Kizelshteyn, P. Ypodimatopoulos, J. Ferguson, H. Holtzman, A. Lippman, D. Schultz, M. Blackshaw, G. Elliott, C. Ng, Innovative Applications of Artificial Intelligence, Twenty-Third IAAI Conference, San Francisco, August, 2011.

"*The Effects of Just-In-Time Social Networks on People's Choices in the Real World*," K.H. Lee, A. Lippman, A. Pentland. Interdisciplinary Workshop on Information and Decision in Social Networks (WIDS). May 31-June 1, 2011.

"*X-Ray Audio*," A. Lippman, B. Kizelshteyn, V. Hung, Proceedings of Interacting with Sound Workshop: Exploring Context-Aware, Local and Social Audio Applications, IwS '11, ACM, New York, NY.

"*Open Transaction Network: Connecting Communities of Experience through Mobile Transactions,"* K.H. Lee, D. Shen, A. Lippman, E. Ross. The Second International Conference on Mobile Computing, Applications and Services (MobiCASE 2010). October 25~27, 2010.

"*Follow Me: A Web-Based, Location-Sharing Architecture for Large, Indoor Environments*," P. Ypodimatopoulos, A. Lippman. 19th International World Wide Web Conference, WWW2010, Raleigh, NC, April 2010.

"*Simple, Zero-Feedback, Distributed Beamforming with Unsynchronized Carriers*," A. Bletsas, A. Lippman, J. Sahalos. IEEE JSAC Special Issue, to be published 2010.

"*Simple, Zero-Feedback, Collaborative Beamforming for Emergency Radio*," A. Bletsas, A. Lippman, J. Sahalos, The Sixth International Symposium on Wireless Communication Systems 2009 (ISWCS'09) Siena-Tuscany, University of Siena, Italy, September, 2009.

"*What Can Failures Teach Us*?" A. Lippman, Editorial, *The Boston Globe*, July 19, 2009.

"*Separation of Multiple Passive RFID Signals Using Software Defined Radio*," D. Shen, G. Woo, D.P. Reed, A. Lippman, IEEE RFID 2009, Orlando, FL.

"*On Frame Synchronization for Multiple Access Channels*," D. Shen, W. Zhang, D.P. Reed, A. Lippman, IEEE ICC - MACOM 2009, Dresden, Germany.

"*Connected Consumption: The Hidden Networks of Consumption*," K.H. Lee, D. Shen, D.P. Reed, A. Lippman, H. Schumacher, IEEE CCNC 2009, Las Vegas.

"*Minimum Energy Cooperative Path Routing in All-Wireless Networks: NP-Completeness and Heuristic Algorithms*", F. Li, K. Wu, A. Lippman, Journal of Communications and Networks (JCN), special issue on Cooperative Transmission and its Applications, June 2008.

"*Presence Information in Mobile Mesh Networks*," P.P. Ypodimatopoulos, D..P. Reed, A. Lippman, M. Bletsas, Consumer Communications and Networking Conference, 2008. CCNC 2008. 5th IEEE

"*Demonstrating SnapN'Share: Content Sharing Over a Socially Informed, Hyper-Local, Face-to-Face Networking Platform*," Nadav Aharony, Andrew Lippman and David P. Reed, CCNC IEEE 2008; Las Vegas, NV.

"*Performance Evaluation of EVRC-Encoded Voice Traffic Over CDMA EVDO, Rev. A*," A. Lippman, F. Li, P. Fleming, E. Chan, I. Vokovic, I. Filipovich, Proceeding of the IEEE Wireless Telecommunications Symposium 2007 MIT Media Laboratory and Motorola, Inc., April 2007. Also published in *Wireless Technology: Applications, Management, and Security*, Springer press, 2007

"*The New Age of Wireless*," A. Lippman, Scientific American, Vol. 295, No. 4, October 2006.

"*Energy-Efficient Cooperative Routing in Multi-hop Wireless Ad Hoc Networks", F. Li, K. Wu, A. Lippman*, in the proceeding of the 25th IEEE International Performance Computing and Communications Conference (IEEE IPCCC '2006) , Phoenix, Arizona, April, 2006.

"*Cooperative Diversity with Opportunistic Relaying*," A. Bletsas, H. Shin, M. Win and A. Lippman. IEEE Wireless Communications & Networking Conference, Las Vegas, April 2006.

"*A Simple Cooperative Diversity Method Based on Network Path Selection*," A. Bletsas, A. Khisti, A., D.P. Reed, A. Lippman, A., IEEE Journal on Selected Areas in Communications, Volume 24, Issue 3, Pages: 659- 672, March 2006.

"*Reclaiming the Vast Wasteland: Why Unlicensed Use of the White Space in the TV Bands Will Not Cause Interference to DTV Viewers*," Marcus, M., Kolodzy, P. and Lippman, A. New America Foundation, Wireless Future Program, Issue Brief #17, October 2005.

"*Probabilistic Optimization for Energy-Efficient Broadcast in All-Wireless Networks*", F. Li, S. Mannor and A. Lippman, Proc 39th Annual Conference on Information Systems and Sciences (CISS'2005), Baltimore, MD, March 2005.

"*Spontaneous Synchronization in Multi-hop Embedded Sensor Networks: Demonstration of a Server-free Approach*," Bletsas A. and A. Lippman, Second European Workshop on Wireless Sensor Networks, January 31 - February 2 , 2005, Istanbul, Turkey.

"*A Multi-resolution Manifold Distance for Invariant Image Similarity*," Vasconcelos, N. and A. Lippman, IEEE Transactions on Multimedia, vol. 7, n. 1, pp. 127-142, February 2005.

"*A Simple Distributed Method for Relay Selection in Cooperative Diversity Wireless Networks, Based on Reciprocity and Channel Measurements*," Bletsas, A., Lippman, A., and Reed, D. P., IEEE 61st Semiannual Vehicular Technology Conference, May 30-June 1, 2005, Stockholm, Sweden.

"*Viral Radio*," Lippman, A., and Reed, D.P., BT Technology Journal, vol 22, No 4, ppg 13-24, October, 2004.

"*Random Tree Optimization for Energy Efficient Broadcast in All-Wireless Networks*," F. Li, S. Mannor, A. Lippman, IEEE International Conference on Sensor and Ad Hoc Communication and Networks (IEEE SECON'04) , CA, USA, Oct. 2004.

"*Toward Minimum-Interference and Minimum-Energy Broadcast in All-Wireless Networks,"* Li, F., Lippman, A., Proc 38th Annual Conference on Information Systems and Sciences (CISS'2004), NJ, March 2004.

"*Efficient Collaborative (Viral) Communication in OFDM Based WLANs*," Bletsas, A. and Lippman, A., Proceedings of the International Symposium on Advanced Radio Technologies," March 2003.

"*All Together Now*," A. Lippman, CONTEXT, Winter 2002/2003.

"*A Multicast Transport Protocol for Cooperative Media Distribution,"* Vyzovitis, D. and Lippman, A. Extended Abstract, Proc. 10th IEEE International Conference on Network Protocols (ICNP 2002), Paris, FR, November 2002.

"*Evaluation of Kalman Filtering for Network Time Keeping,* ," Bletsas, A. and Lippman, A. MIT Media Laboratory, November 2002.

"*Cooperative Multicast for Scalable Real-Time Media Distribution*," Vyzovitis, D. and Lippman, A. MIT Media Laboratory, September 2002.

"*Round 2.0*, " A. Lippman, CONTEXT, August/September 2002.

"*Scaling the Internet*," A. Lippman, MIT Media Laboratory, July 2002.

"*MAST: A Language for Programmable Networks*," Vyzovitis, D. and Lippman, A., MIT Media Lab Technical Report, May 2002

"*Intellectual Property, Peer-to-Peer, and Micropayments: Creating a Sustainable Distribution Economy*," A. Lippman and J. Silber, MIT Media Laboratory, 2001.

"*Statistical Models of Video Structure for Content Analysis and Characterization*," Vasconcelos, N., and Lippman, A. IEEE Transactions on Image Processing, vol. 9, no. 1, January 2000.

"*Humane Interfaces to Video*," Iyengar, G., Vasconcelos, N., and Lippman. A., Asilomar Conference on Signals, Systems, and Computers, Asilomar, California, 1998.

"*Bayesian Modeling of Video Editing and Structure: Semantic Features for Video Summarization and Browsing*", Vasconcelos, N., and Lippman, A., IEEE Int. Conf. Image Processing, Chicago, Illinois, 1998.

"*Embedded Mixture Modeling for Efficient Probabilistic Content-Based Indexing and Retrieval*," Vasconcelos, N., and Lippman, A., SPIE Multimedia Storage and Archiving Systems III, Boston, Massachusetts, 1998.

"*Learning Mixture Hierarchies*," Vasconcelos, N., and Lippman, A., Neural Information Processing Systems, Denver, Colorado, 1998.

"*A Spatiotemporal Motion Model for Video Summarization*", Vasconcelos, N., and Lippman, A., IEEE Conf. in Computer Vision and Pattern Recognition, Santa Barbara, California, 1998.

"*A Bayesian Framework for Semantic Content Characterization*" Vasconcelos, N., and Lippman, A., IEEE Conf. in Computer Vision and Pattern Recognition, Santa Barbara, California, 1998.

"*Models for Automatic Classification of Video Sequences*," Iyengar, G. and Lippman, A.B., Proceedings of SPIE - Storage and Retrieval from Image and Video Databases VI., San Jose, January 1998.

"*Chacha: A Model for Interactive Video on the World Wide Web*," Boissiere, G. and Lippman, A.B., Proceedings of ICCIMA'98 (International Conference on Computationnal Intelligence and Multimedia Applications), Monash University, Australia, 1998.

"*Evolving Discriminators for Querying Video Sequences*," Iyengar, G. and Lippman, A.B., Proceedings of SPIE - Storage and Retrieval from Image and Video Databases V., San Jose, January 1997.

"*Towards Semantically Meaningful Feature Spaces for the Characterization of Video Content*", Vasconcelos, N., and Lippman, A., IEEE Int. Conf. Image Processing, Santa Barbara, CA, 1997.

"*Content-based Pre-indexed Video*", Vasconcelos, N., and Lippman, A., IEEE Int. Conf. Image Processing, Santa Barbara, California, 1997.

"*Library-based Coding: a Representation for Efficient Video Compression and Retrieval*", Vasconcelos, N., and Lippman, A., IEEE Data Compression Conference, Snowbird, Utah, 1997.

"*Multiresolution Tangent Distance for Affine-Invariant Retrieval*," Vasconcelos, N., Lippman, A., MIT Media Lab, March 1996.

"*Empirical Bayesian EM-Based Motion Segmentation*," Vasconcelos, N., Lippman, A., MIT Media Lab, June 1996.

"*A Bayesian Video Modeling Framework for Shot Segmentation and Content Characterization*," Vasconcelos, N., Lippman, A., MIT Media Lab, November 1996.

"*Entropy Measures for Controlled Coding*," Iyengar, G. and Lippman, A., Proceedings of the IS&T Symposium, Digital Video Compression '96, San Jose, January 1996.

"*The Media Bank: A Fault Tolerant Heterogeneous Distributed Pull Based Architecture for the Delivery of Object Oriented Multimedia Across Packet Switched Networks*," Kermode, R., Holtzman, H., Lippman, A., Proceedings of the 7th International Workshop on Packet Video, Brisbane, Australia, March 1996.

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"*Media Banks: Entertainment and the Internet*," Lippman, A. and Kermode, R., IBM Systems Journal, vol. 35, nos. 3&4, 1996.

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"*MPEG-2 requirements, profiles and performance verification - framework for developing a generic video coding standard,"* Okubo, S., McCann, K., and Lippman, A.B., Image Communication, Vol. 7, No. 3, September 1995, pp. 201-210.

*"Net Profits: How the Information Age Hits the Living Room*", Lippman, A., Le Temps Strategique, October 1995.

"*Digital Television: A Perspective",* Netravali, A., and Lippman, A.B., Proceedings of the IEEE, Vol. 83, No. 6, June 1995.

"*Coding for Content Enhanced Resolution from Coding*", Kermode, R.G., Lippman, A.B., International Conference on Image Processing Conference, Washington, DC, October 1995.

"*Information Theoretic Measures for Characterizing Digital Video*", Iyengar, G., Lippman, A., International Conference on Image Processing Conference, Washington, DC, October 1995.

"*Spatiotemporal Model-based Optic Flow Estimation",* Vasconcelos, N., and Lippman, A., International Conference on Image Processing Conference, Washington, DC, October 1995.

"*Spatio-temporal segmentation based on motion and statis segmentation",* Dufaux, F., Moscheni, F., Lippman, A., International Conference on Image Processing Conference, Washington, DC, October 1995.

"*Re-Codable Video*", Pereira, M., Lippman, A.B., Proceedings of the First IEEE International Conference on Image Processing, Austin, TX, November 13-16, 1994.

"*The Distributed Media Bank*", Proceedings of the First International Workshop on Community Networking, San Francisco, July 13-14, 1994.

"*Library-based Image Coding*", Vasconcelos N., Lippman, A.B., ICASSP Proceedings for the 1994 International Conference on Acoustics, Speech and Signal Processing, Adelaide, Australia, April 1994.

"*The Coming Settop Shootout*", Lippman, A.B., Testimony paper given before the Subcommittee on Telecommunications and Finance on February 1, 1994.

"*MPEG-2 Requirements, Profiles and Performance Verification*", Okubo, S., McCann, K., Lippman, A.B., Proceedings of HDTV '93 international workshop, Ottawa, October 1993.

*"Structured Sound and Pictures",* Lippman, A.B., IEEE/Academica Sineca Seminar on Multimedia Distributed Systems, Taipei, Taiwan, April 1993.

*"Generalized Predictive Coding of Movies",* Lippman, A.B., Kermode, R., PCS '93 Proceedings, March 1993.

*"Scalable Open-Architecture Television"*, Bove, V.M., Lippman A.B., SMPTE Journal, January 1992.

*"Feature Sets for Interactive Images"*, Lippman, A.B., CACM, Vol. 34, No. 4, April 1991.

*"HDTV Sparks a Digital Revolution"*, invited paper for BYTE Magazine, December 1990, Vol. 15, No. 13.

*"Optimization of Subband Vector Quantization for Moving Images"*, Senoo, T., Girod, B., Lippman, A.B., invited paper for SMPTE "Sound and Vision '90", Sydney, Australia, July 4, 1990.

*"High-Definition Systems in the 1990s: Open Architecture & Computational Video"*, Lippman, A.B., Bove, V.M., Bender, W., Liu, L., Watlington, J., HDTV World Review, 1990, Vol. 1, No. 3.

*"Open Architecture Television Receivers and Extensible/Intercompatible Digital Video Representations"*, Bove, V.M, Lippman, A.B., invited paper for IEEE ISCAS '90, New Orleans, May 1-3, 1990.

*"Fifth Generation Television",* invited paper for Optical News, January 1990, Vol. 1, No. 1.

*"A Compatible High-Definition Television System Using the Noise-Margin Method of Hiding Enhancement Information"*, Schreiber W.F., Adelson E.H., Lippman A.B., Rongshu, Gong, Monta P., Popat A., Sallic H., Shen P., Tom A., Zangi K., Netravali A.N., SMPTE Journal, Vol. 98, No. 12, December 1989.

*"Robust Bandwidth-Efficient HDTV Transmission Formats"*, Schreiber, W.F, Butera, W, Chalom, E, Monta, P, Popat, A, Lim, J, Lippman A.B, Netravali, A.N, Staelin, D.H. SMPTE Conference, Los Angeles, CA, October 21, 1989.

*"Automatic 3-D Scene Modeling from Range & Motion",* Girod, B, Bove, V.M, Lippman, A.B., invited paper for the 2nd International Workshop on 64 kbit/s Coding of Moving Video, Hannover, W. Germany, September 1989.

*"Coding Image Sequences for Interactive Retrieval",* Lippman, A.B., Butera, W., Communications of the ACM, Vol. 32, No. 7, July 1989.

*"Reliable EDTV/HDTV Transmission in Low-Quality Analog Channels",* Schreiber, W.F, Lippman, A.B, SMPTE Journal, Vol. 98, No. 7, July 1989.

*"Open Architecture Television",* Lippman, A.B., OSA invited paper for Applied Vision, 1989 Technical Digest Series, Vol. 16, San Francisco, CA, July 1989.

*"A Compatible High-Definition Television System Using The Noise-Margin Method of Hiding Enhancement Information",* Schreiber, W.F., Adelson, E.H., Lippman, A.B, Girod, B., Monta, P., Popat, A., Sallic, H., Shen, P., Tom, A., Zangi, K., Netravali, A., SMPTE, San Francisco, CA, 1989.

*"Single-Channel Backward Compatible EDTV Systems"*, Lippman, A.B., Netravali, A.N., Adelson, E.H., Neuman, W.R., Schreiber, W.F. SMPTE Journal, Vol. 98, No. 1, January 1989.

*"Channel-Compatible 6-MHz HDTV Distribution Systems"*, Schreiber, W.F., Lippman, A.B., Netravali, A.N., Adelson, E.H., Staelin, D.H., SMPTE Journal, Vol. 98, No. 1, January 1989.

*"Single-Channel HDTV systems"*, Schreiber, W.F., Lippman, A.B., SPIE Symposium "Visual Communications and Image Processing '88", Cambridge, MA, November 9, 1988.

*"Asymmetric Coding of Motion Pictures Sequences"*, Picture Coding Symposium, Torino, Italy, September 12-14, 1988.

*"Bandwidth-Efficient Advanced Television Systems"*, Schreiber, W.F., Lippman, A.B., NAB Conference, Las Vegas, NV, April 11, 1988.

*"Single-Channel HDTV Systems, Compatible and Noncompatible",* Schreiber, W.F., Lippman A.B., HDTV Workshop, L'Aquila, Italy, March 1988.

*"High Definition Television"*, NCGA '88 Conference Proceedings, Tutorials Vol. II, March 20-24, 1988.

*"News and Movies in the 50 Megabit Living Room"*, Lippman, A.B., Bender, W., IEEE/IECE.J Global Telecommunications Conference, Tokyo, Japan, November 15-17, 1987.

*"Computing with Television: Paperback Movies"*, Metropolitan Chapter of the Human Factors Society, Proceedings of the 1986 Annual Symposium "Images, Information & Interfaces - Directions for the 1990's".

*"Unrecordable Video"*, Lippman, A.B., Hoque, T., IEEE Transactions on Broadcasting, Vol. BC-33, No. 3, September 1987.

*"Electronic Publishing"*, MIT Media Lab, Cambridge, MA, January 1986.

*"Color Word Processing"*, Lippman, A.B., Bender, W., Solomon G., Saito, M., IEEE Computer Graphics and Applications, Vol. 5, No. 6, June 1985.

"*Optical Publishing"*, Computer Society International Conference (COMPCON), San Francisco, CA, February 1985.

*"Imaging and Interactivity"*, invited paper for the 15th Joint Conference on Image Technology, Tokyo, Japan, November 26, 1984.

*"Transmission of Presence"*, International Conference of Progetts Milano, Milan, Italy, June 15, 1984.

*"Optical Data Storage & Electronic Publishing"*, invited paper for the Optical Society of America, Monterey, CA, April 18, 1984.

*"Non-Committal Computer Systems"*, IEEE Conference, Frontiers in Education, September 1983.

*"Personal Computers as Intelligent Partners",* Proceedings of IEEE Trends and Applications Conference, May 1983.

*"Current and Proposed Research at MIT on Videodisc Training"*, invited paper for the US Dept. of Commerce, National Bureau of Standards, December 13, 1982.

*"Video Instrument Control"*, Instrument Society of America (ISA), International Conference and Exhibit, Philadelphia, PA, October 1982.

*"Graphics and Bandwidth Compression in Video Conferencing"*, with Peggy Weil, SIGGRAPH 1982, Boston, MA, July 26, 1982.

*"Emerging Computer Media: On Image Interaction"*, SPIE Proceedings for the 1st International Conference on Picture Archiving and Communication Systems, January 1982.

*"Computational Video"*, Proceedings for the 7th Canadian Man-Computer Communications Conference, June 1981.

*"A Flat Parallax-Free Interactive Graphic Station"*, Journal of the Society for Information Display, Vol. 21, No. 1, 1981.

*"Semantic Bandwidth Compression: Speechmaker"*, paper for the Picture Coding Symposium, June 1981.

*"And Seeing through your Hand"*, Proceedings of the SID, Vol. 22/21 MIT, Cambridge, MA, 1981.

*"Future Interactive Graphics: Personal Video"*, Backer, D., Lippman A.B., NCGA Conference Proceedings, 1981.

*"Video at the Learning Interface"*, Proceedings for the Society for Applied Learning Technology Symposium on Learning Technology for the 80's, February 1981.

*"Movie-Maps: An Application of the Optical Videodisc to Computer Graphics"*,Proceedings for SIGGRAPH '80, Washington, July 14-18, 1980.

*"High Quality Graphic Display on Standard Television"*, The Journal of the Society for Information Display.

## MIT Research Programs (Since 1985)

| | |
|---|---|
| Robert Wood Johnson Foundation<br><br>(2017-2018) | One-year grant for MedRec, a prototype system to provide patient-centered control and authentication of personal medical records |
| NSF Grant CNS-0434816<br>NeTS for research on Viral Radio<br>(2004-2007) | Three-year grant from National Science Foundation |
| Communications Futures Program<br>along with David Reed, Media Lab;<br>(2003-2018) | Principal Investigator of cross-MIT research venture<br><br>Charles Fine, MIT Sloan School of Management; and David Clark, MIT Computer Science and Artificial Intelligence Laboratory |
| Digital Life Consortium<br>(1997-2016) | Director of Media Laboratory consortium of sponsors Bertelsmann, Brightstar Corporation, Cisco Systems, France Telecom, Google, News Corporation, Nortel Networks, NTT Comware, Panasonic Technologies Company, Philip Morris USA, Qualcomm Incorporated, Rodale, Inc., and Stan Winston Studio, Inc. and others. |
| TV of Tomorrow Program<br>(1991 - 1996) | Principal Investigator, unincorporated venture between Bertelsmann, Bell-Northern Research, Deutsche Telekom, Hughes Aircraft Company, Eastman Kodak Company, Intel Corporation, Intel Corporation, Philips International, Sony Corporation, Televisa, Toppan Printing Company and Viacom International |
| Media Bank<br><br>(1994 - 1998) | Principal Investigator, funded by National Computer Board, Singapore |
| Movies of the Future Program<br>(1985 - 1991) | Principal Investigator, unincorporated venture between Paramount, Warner Brothers and Viacom, International, later others |
| Synthetic Teleportation<br>Earlier:<br>"Mapping by Yourself" | DARPA, 1985-1987<br><br>DARPA program that developed the MovieMap, directed As a graduate student |
| "Maintenance and Repair" | ONR program on interactive video |

## Patents

*A Quasi-Passive Wakeup Function to Reduce Power Consumption of Electronic Devices,* US Patent No 7864051
*Realistic Audio Communication in a Three-Dimensional Computer-Generated Virtual Environment,* US Patent Application 12/344,542, filed 12/28/2008
*Method for Automatic Signal Routing In Ad Hoc Networks*, US Patent pending, filed 11/19/02

*Tag Interrogation With Observable Response Signa*l, US Patent No. 7,109,865, filed 9/26/02
*Video Image Compositing Techniques*, US Patent Number: 5,262,856, filed 11/16/93
*Receiver-Compatible Enhanced Definition Television System*, US Patent No. 5,010,405, filed 4/23/91
*Video Graphic Arthroscopy System*, US Patent No. 5,005,559, filed 4/9/91
*Extended Definition Television Systems*, US Patent No. 5,003,377, filed 3/26/91
*Multiscale Coding of Images*, US Patent No. 4,987,480, filed 1/22/91
*Unrecordable Video Signals*, US Patent No. 4,673,981, filed 6/16/87

## Other

Advisory board, Applause, 2014

Customer Board, Nokia Siemens Networks (now Nokia Networks), 2013 – 2016

Technical Advisory Board, EMC, 2013 -- 2019

Director, Beonten, 2012 – 2013

Advisory Panel, Terrarium, 2012 - 2014

Advisory Board, Echonest, 2008 - 2014

Advisory Board, Damaka, Inc., 2006-2010

Advisory Board, MiND (Media Independence), 2006-2008

Science Advisor, Public Radio International's *PRI at Night*, 2006

Investor/advisor, Ember, 2001-2012

Board Member, Wave Systems, c2000 – c2003

Chairman, Presto Technologies, 1998-2000

Member of Advisory Board to Board of Directors, MaMaMedia, Inc., 1997-2003

Member of Scientific Advisory Board, Centre for User Oriented IT Design, Stockholm, Sweden, 1997-2004

Member of Technical Advisory Board, VTEL (Austin), 1992-2000

Member of International Steering Committee, International Workshop on Coding Techniques for Very Low Bit-rate Video, 1995

Member of the Science Council of the Cross Industry Working Team (XIWT), Corporation for National Research Initiatives (CNRI), 1993-present

Founding Member of the Editorial Board for Multimedia Systems Journal, 1992

Member of the International Organizing Committee for the Picture Coding Symposium, 1989-1993

Chairman, International Organizing Committee, Picture Coding Symposium, 1990

Member of Strategic Advisory Council of the Research and Demonstration Center on Remote Medical Consultation Via High-Definition Television, Texas Children's Hospital, 1990-91

Member of Editorial Board of Image Communication Journal, 1989-2003

Member of the Steering Committee for International Workshop on Advanced Techniques for Transmission of Video at 64 kbit/s or less, Hannover, West Germany, 1988-90

Board Member of Technology Broadcasting Corporation (WMBR), 1983-1989

FCC Advisory Committee Member of Advanced Television Service, 1989-90

Member of the US CCIR Study Group 11 (Television), 1990

Member of Editorial Board of ACM TOIS (Transactions on Information Systems), 1989-1990

Chairman of the Board of Advisors, Medical Simulation Foundation, 1987-1988

Medical Simulation Foundation: Principal Investigator for "The Video-Graphic Arthroscope" Project, 1987-88

Graduate Student Council (GSC) Teaching Award for the Architecture Department, 1986

1983 Nebraska Interactive Videodisc Award for Best Technical Achievement, Lincoln, NE, September 15, 1983

MIT Committee member of the Computing Environment, 1983-84

Member of Project Athena Technical Committee, 1983-84

Review Board, NSF, Applications of Interactive Videodisc to Science Education, 1977-1979, 1981

Member of the School Committee, City of Salem, MA. 1988-1996

## Memberships

ACM; IEEE; IEEE Computer Society

## Theses Supervised

| | |
|---|---|
| Nadav Aharony | *Virtual Private Milieus: Sharing Our Digital Aura through Social and Physical Proximity*, MS, September 2008 |
| David Anderton-Yang | *Countering Source Bias in News,* MS, September 2019 |
| Matthew Antone | *Synthesis of Navigable 3-D Environments from Human-Augmented Image Data*, ME EECS, September 1996 |
| Barry Arons | *The Audio-Graphical Interface to a Personal Integrated Telecommunications System*, MS, September 1984 |
| Derek Atkins | *Access and Access Control*, MS, June 1995 |

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|---|---|
| Daniel Augusto-Marquez | *An Attempt at Democratizing Resource Allocation for Social Movements Using Decentralized Autonomous Organizations,* MS, September 2021 |
| Dave Backer | *Structure and Interactivity in Media: A Prototype for the Electronic Book*, PhD, April1988 |
| Hisham Bedri | *Spatial News: Exploring Augmented Reality as a Format for Content Production, Organization, and Consumption*, MS, September 2018 |
| Alex Benenson | *VideoLogo: Synthetic Movies in a Learning Environment*, MS, June 1990 |
| Matthew Blackshaw | *The broadcast marketplace : Designing a more efficient local marketplace for goods and services*, MS, June 2012 |
| Aggelos Bletsas | *IntelligentAntenna Sharing in Cooperative Diversity Wireless Networks*, PhD, August 2005 |
| Aggelos Bletsas | *Time Keeping in Myriad Networks: Theories, Solutions, and Applications*, MS, June 2001 |
| Matthew Blackshaw | *Opportunistic, Collaborative and Synchronized, Proximal Device Ecology*, MA, June 2012 |
| Katherine Blocher | *Affective Social Quest (ASQ) Teaching Emotion Recognition with Interactive Media and Wireless Expressive Toys*, MS, June 1998 |
| Guillaume Boissiere | *Personalized Multicast*, SM MAS, June 1988 |
| V. Michael Bove | *Synthetic Movies Derived from Multi-Dimensional Image Sensors*, PhD, June 1989 |
| V. Michael Bove | *Personalcasting: Interactive Local Augmentation of Television Programming*, MS, September 1985 |
| V. Michael Bove | *A Flexible Integrated Framestore System*, BS, May 1983 |
| Eric Brown | *Optical Publishing*, MS, February 1983 |
| William Butera | *Multiscale Coding of Images*, MS, July 1988 |
| Mark Callahan | *A 3-D Display Head-set for Personalized Computing*, MS, June 1983 |
| Agnes Cameron | *Cybernetic Maintenance: Exploring Infrastructure Legibility of Waste Systems at MIT,* MS, June 2019 |
| Ken Carson | *A Color Spatial Display Based on a Raster Framebuffer and Varifocal Mirror*, MS, September 1984 |
| William Capolongo | *Color Spatial Animation Using a Varifocal Mirror Display*, BS, May 1985 |

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|---|---|
| Sailabala Challapalli | *Modeling the Temporal Components of Video Structure*, MS, May 2001 |
| Xiang Chen | *Adaptive Bit Allocation for Spatiotemporal Subband Coding Using Vector Quantization,* MS, June 1990 |
| Pascal Chesnais | *A Graphic/Photographic Arthroscopy Simulator*, MS, February 1988 |
| Constantine Christakos | *Taking Advantage of Distributed Multicast Video to Deliver and Manipulate Television*, MA, June 2000 |
| Constantine Christakos | *Distributed-in/Distributed-out Sensor Networks: A New Framework to Analyze Distributed Phenomena*, PhD, June 2006 |
| Lawrence N. Claman | *A Two Channel Spatio-Temporal Encoder*, BS, May 1988 |
| James Cooley | *A Day in the Life of the RF Spectrum*, MS, September 2005 |
| Vivian Diep | *Me.TV : A Visual Programming Language and Interface for Dynamic Media Programming*, MS, June 2015 |
| Judith Donath | *Inhabiting the Virtual City: The Design of Social Environments for Electronic Communities*, PhD, June 1996 |
| Judith Donath | *The Electronic Newsstand: Design of an Intelligent Interface to Variety of News Sources in Several Media,* MS, September 1986 |
| Chen-Koung Dong | *Measurement of Printer Parameters for Model-Based Halftoning,* MS, May 1992 |
| Daniel Dreilinger | *Scale Free Information Retrieval*, EECS, Meng, June 1998 |
| Kevin Dunnell | *Latent Lab: Exploration Beyond Search and Synthesis*, MS, June 2023 |
| Ariel Ekblaw | *MedRec : Blockchain for Medical Data Access, Permission Management and Trend Analysis*, MS, June 2017 |
| Steve Gano | *Forms for Electronic Books*, MS, June 1983 |
| William Gardner | *Machine-Aided Visualization of Molecular Vibration*, BS, June 1982 |
| David Gauthier | *Distributed, Mobile and Pervasive Systems Design*, MS, September 2009 |
| Carol Ginsberg | *Human Body Motion as Input to an Animated Graphical Display*, MS, June 1983 |
| Dagmawi S. Haile | *Liquid News—A Semantic-Relational Model for Enhanced Understanding*, EECS, Meng, June 2023. |

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|---|---|
| Jeffrey Halbig | *Construction and Analysis of a Wireless Antenna-Sharing Scheme*, MS, June 2004 |
| Walid Hamdy | *Hardware Implementation of Dynamic Video on Personal Computers*, BS, May 1986 |
| Michael J. Hawley | *Structure out of Sound*, PhD (Committee), September 1993 |
| Mohamed Atef Hendawi | *Multimedia Capture of Events to Support Passive Virtual Attendance,* MS, June 1995 |
| Henry N. Holtzman | *Three-Dimensional Representations of Video using Knowledge Based Estimation*, MS, September 1991 |
| Leonard Hourvitz | *Stills from Movies: Personal Photography and the Personal Computer*, MS, August 1984 |
| Giridharan Iyengar | *Video Retrieval for Reuse*, PhD, June 1998 |
| Giridharan Iyengar | *Information Theoretic Measures for Encoding Video,* MS, September 1995 |
| Mike Hao Jiang | *Enlightened: Can short-form news videos open minds?*, MS, June 2021. |
| Britney Johnson | *Kicks x Cliques: Exploring the Intersection of Sneaker Culture and Mental Health in the Black Community,* MS, 2019. |
| Frank Kao | *Parallel Processing Interfaces to Television,* MS, June 1995 |
| Karrie Karahalios | *Salient Movies*, MEng, June 1995 |
| Karrie Karahalios | *Merging Static and Dynamic Visual Media Along an Event Timeline*, SM, February 1998 |
| Jeffrey Keast | *The Design and Application of a Personal Printer/Scanner System*, MS, June 1985 |
| Roger Kermode | *Smart Network Caches: Content and Application Mediated Delivery of Multimedia Over the Internet*, PhD, March 1998 |
| Roger G. Kermode | *Building the Big Picture: Enhanced Coding from Resolution*, MS, June 1994 |
| Boris Kizelshteyn | *REACH: The Local Social Favor Exchange,* MS, June 2012 |
| Shyam Krishnamoorthy | *Minerva: A Smart Video Assistant for the Kitchen,* MS, June 2001 |
| Fen (née Steven Ford) Labalme | *The Design and Implementation of NewsPeek: an Interactive News Gatherer for Future Communications Systems*, SsB, 2018. |
| Amir Lazarovich | *Invisible Ink : Blockchain for Data Privacy*, MS, June 2015 |

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|---|---|
| Gene S. Lee | *Progressive Transmission of Digitally Compressed Color Images*, BS, June 1989 |
| Kwan Lee | *The Influences of the Just-in-time Social Cloud on Real World Decisions*, PhD, February, 2012 |
| Sung Hyuck Lee | *XCast: A Personalized and Groupwise Broadcasting System for Social Event Networking*, MS, September 2008 |
| Fulu Li | *Community Storage*, PhD, June 2009 |
| Fulu Li | *Cooperative Multicast in Wireless Networks*, MS, June 2005 |
| Inna Lobel Koyrakh | *Increasing the Bandwidth of Social Navigation during the Prototyping Process*, MS, February 2011 |
| Julia Shuhong Ma | *Interest networks : understanding the influence of interesting people in an organization*, MS, June 2012 |
| Bruce McHenry | *Multi-Modal Communication in the Computer Medium*, BS, June 1984 |
| Patrick Campbell McLean | *Structured Video Coding*, MS, June 1991 |
| Christopher Metcalfe | *Media Jacket: An Integrated Clothing Based Personal Communications System*, MS, June 1999 |
| Ilia Mirkin | *Reliable Real-time Stream Distribution Using an Internet Multicast Overlay*, MS, February 2006 |
| Robert Charles Mollitor | *Image Sequence Compression via Code Encyclopedias,* BS, May 1988 |
| Paul Thomas Monaghan | *Codebook Replenishment of Vector Quantized Movies by use of a Megatable*, BS, May 1989 |
| Casey R. Muller | *Design and Performance of a Viral Network*, MS, June 2003 |
| Nchinda Nchinda | *MedRec: Patient Centered Medical Records Using a Distributed Permission Management System*, EECS, Meng, 2018. |
| Savannah Niles | *Glyph: Lightweight and Evocative Looping Images in the News*, MS, 2015. |
| Eugene N. Opsasnick | *Color Correction for the Eikonix Digitizing Scanner*, BS, May 1988 |
| Durga Pandey | *UniPlug: A Framework For Ad-hoc Invention Sharing Over A Campus Network*, MS, September 2007 |
| Peter Pathe | *A Virtual Vocabulary Speech Recognizer*, MS, June 1983 |

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|---|---|
| Manuela Pereira | *Video Coding in a Broadcast Environment,* MS, September 1993 |
| Kalliroi Retzepi | *Internet as an Object*, MS, 2019 |
| Travis Rich | *Encoding Data into Physical Objects with Digitally Fabricated Textures*, MS, June 2013 |
| Travis Rich | *Collaborative Scientific Publishing: A New Research Ecosystem*, PhD, June 2017 |
| Steven L. Rohall | *A Graphical Interface for Cooperative Problem Solving*, MS, May 1988 |
| Pasquale Romano | *Vector Quantization for Spatiotemporal Sub-band Coding*, MS, February 1990 |
| Yasmine Rubinovitz | *News Matter - Embedding Human Intuition in Machine Intelligence through Interactive Data Visualizations*, MS, June 2017 |
| James B. Salem | *Computers in the Audio Domain; creating an audio news system,* BS, June 1984 |
| Gitta Salomon | *Design and Implementation of an Electronic Special Interest Magazine*, MS, June 1986 |
| Aruna Sankaranarayanan | *Interactivity and Authenticity in AI Augmented Videos*, MS, September 2021 |
| Dan Sawada | *Recast: An Interactive Platform for Personal Media Curation and Distribution*, MS, June 2014 |
| Robert Schaeffer | *Audio Augmentation of Video Disc Training Systems*, BS/SM, May 1983 |
| Dawei Shen | *Co-channel Digital Signal Separation: Application and Practice*, MS, February 2008 |
| Dawei Shen | *Design of A Market-Incented Wisdom Exchange for Organizations and Communities*, PhD, June 2012 |
| Thariq Shihipar | *Video in PubPub: Moving Images in Context*, MS, June 2016 |
| Jeremy Silber | *A Cooperative Communication Protocol for Wireless Ad-Hoc Networks*, ME, June 2002 |
| Abha Singh | *Variable Resolution Video*, MS, June 1991 |
| Scott T. Smith: | *Scalable Distributed Resource Location*, ME EECS, May 1998 |
| Marc Spehlmann | *A Speech Peripheral for an IBM Personal Computer*, MS |
| Joseph B. Stampleman | *Multiscale Codebooks*, BS, May 1989 |

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|---|---|
| Joseph B. Stampleman | *Scalable Video Compression,* MS, June 1992 |
| Jian Shen (JS) Tan | *996, moyu, and involution: tech work in the age of platform monopoly,* MS, September 2022. |
| Brian Tice | *Sonic Artifacts*, MS, June 2017 |
| Eyal Toledano | *Opportunistic, Collaborative and Synchronized, Proximal Device Ecology*, June 2014 |
| Dang Van Tran | *Multimedia Applications and Network Management Support in Video DialTone ATM Network*, MS/BS, May 1994 |
| Edison Thomaz | *Developing Distributed Contextualized Communication Services*<br>MS, September 2002 |
| Tri D. Tran | *Low Delay MPEG2 Video Encoding*, BS /MEng EECS, June 1997 |
| Nuno Vasconcelos | *A Bayesian Framework for Content Characterization, Summarization, Indexing, and Retrieval*, PhD, November 1997 |
| Nuno Vasconcelos | *Library-based Image Coding using Vector Quantization of the Prediction Space*, MS, September 1993 |
| Dimitrios Vyzovitis | *An Active Protocol Architecture for Collaborative Media Distribution*, MS, June 2002 |
| Tejal Wakchoure | *Detecting the Emotive Content of Broadcast News*, BS, 2019 |
| Anders Richard Wallgren | *Movies on the Workstation*, BS, May 1989 |
| John A Watlington | *Synthetic Movies,* MS, September 1989 |
| John A. Watlington | *A Decoder for Vector Coded Color Motion Picture Sequences*, BS, May 1987 |
| Tomer Weller | *This is How: Story Centric Distributed Brainstorming and Collaboration*, MS, June 2017 |
| Grace Woo | *Demonstration and Evaluation of Co-channel DBPSK Source Separation*, MS, June 2007 |
| Grace Woo | *VRCodes : embedding unobtrusive data for new devices in visible light*, PhD, June 2012 |
| Steven Yelick | *The Authoring of Optical Videodiscs with Digital Data,* MS, June 1982 |
| Steven Yelick | *Anamorphic Image Processing*, BS, June 1980 |

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|---|---|
| Polychronis Ypodimatopoulos | *Cerebro: Forming Parallel Internets and Enabling Ultra-Local Economies*, MS, September 2008 |
| Polychronis Ypodimatopoulos | *An Open Application Framework For Social Discovery*, PhD, June 2012 |
| Hector Yuen | *An Ad-Hoc Wireless Communication System*, MS, August 2006 |

## Panels and Presentations

Keynote Speaker, CDW Enabling the Workforce SummIT, Austin, April 2018

Keynote Speaker, Tencent Media Summit, Shanghai, November 2017

Comms Vision Chair and Speaker, Gleneagles, Scotland, November 2017

Keynote Speaker, UBTech, Orlando, June 2017

Future Media panel, National Institute of Standards and Technology (NIST), Named Data Networking Workshop, Gaithersburg, MD, June 2016

Keynote Speaker, Comms Vision, Gleneagles, Scotland, November 2015

Speaker, CDW Collaboration and Mobility Summit, San Francisco, September 2015

Speaker, Outdoor Advertising Association of America, San Diego, May 2015

Speaker, MIT Information and Communication Technologies Conference, Cambridge, MA, April 2015

Keynote Speaker, RDV Media: Transformation, Montreal, Canada, September 2014

Speaker, 61st Cannes Lions International Festival of Creativity, Cannes, France, June, 2014

Keynote Speaker, Ernst & Young Global Media & Entertainment Industry Meeting, Orlando, Florida, December, 2012

Keynote Speaker, AT&T Technical Leaders Forum, Orlando, Florida, November, 2012

Keynote Speaker, AT&T Technical Leaders Forum, San Juan, Puerto Rico, February, 2012

Panel Speaker, PWC Global Communications Forum, London, June, 2011

Keynote Speaker, Fidelity Executive Forum, Orlando, May 2011

Keynote Speaker, AT&T Technical Leaders Forum, Los Angeles, November 2010

Keynote Speaker, HSM World Marketing & Sales Forum, Lisbon, November 2009

Keynote Speaker, 16th CLSA Investors' Forum, Hong Kong, September 2009

Keynote Speaker, HSM World Marketing & Sales Forum, Mexico City, July 2009

Keynote Speaker, Gartner Wireless and Mobile Summit, Chicago, February 2009

Keynote Speaker, TelephonyLIVE, Chicago, September, 2008

Keynote Speaker, The Future of Computing, Dell Mexico, Monterey, Mexico, September, 2008

Keynote Speaker, Product Development & Management Association's International Conference, Orlando, September, 2008

Keynote Speaker, Wainhouse Research, Cambridge, MA, July 2008

Keynote Speaker, Gartner Group Future of Technology, Orlando, June 2008

Keynote Speaker, HSM World Marketing & Sales Forum, São Paulo, Brazil, June 2008

Keynote Speaker, Photo Marketing Association International, Las Vegas, February 2008

Speaker, eg07, Los Angeles, December 2007

Speaker, Gartner Networking Summit, Nashville, December 2007

Keynote Speaker, SSPA Services Leadership Conference, New Orleans, October 2007

Keynote Speaker, SonyBMG Music Entertainment Worldwide Information Technology Conference, Miami, April 2007

Panelist, NSF Cognitive Ratio and Cooperative Communication, Washington, DC, April 2007

Keynote Speaker, IEEE/CTIA Portable'07 Conference, Orlando, March 2007

Panelist, The New New Media, Realscreen Summit, Washington, DC, January 2007

Keynote Speaker, World Science Forum, New York, NY, November 2006

Keynote Speaker, Playback Mobile Forum, Toronto, Canada, May 2006

Keynote Speaker, Media Summit/Digital Hollywood, New York NY, February 2006

Panelist, Telecoms Transitions, Lisbon, Portugal, June 2005

Keynote Speaker, IT MIDIA, Sao Paulo, Brazil, June 2005

Speaker, IDG Communications Meeting, Cadiz, Spain, May 2004

Speaker, Samsung Tech Fair 2003, Seoul, Korea, July 2003

Workshop Co-Director: United Nations: The Wireless Internet Opportunity for Developing Nations, New York, June 2003

Keynote speaker, Worldcom Customer Summit, Orlando, FL, February 2003

Keynote speaker, Nextel Indirect Conference, Las Vegas, January 2003

Presentation before Congressional Internet Caucus, Washington, DC, July 2002

"*Not Your Victorian Internet*," speaker, MIT On the Road, The Association of Alumni and Alumnae of MIT, West Palm Beach, FL, January 2001.

"*Digital Extremism*," speaker, The Leadership Center, Atlanta, GA, November 2000

"*Digital Entertainment*," speaker, Minnesota TEKNE Awards, Minneapolis, MN, November 2000
"Digital Life: Clearing the Cobwebs from the Net," speaker, New York State Annual Meeting, Lake Placid, NY, June 2000

"*The Future is Now*," keynote speaker, South Dakota Governor's Economic Development Conference, Pierre, SD, April 2000

"*Always On*," keynote speaker, Canadian Music Week conference, Toronto, March 2000

"*Accessible Computers for All*," speaker, INET'2000, Sao Paulo, Brazil, July 2000

"*Taking the Lead – Issues of the Future*," keynote speaker, Canadian Associate of Broadcasters, Montreal, Canada, November 1999.

"*The New Technology Changing the World*," keynote speaker, Mgate New-Biz Forum, Athens, Greece, January 1999.

"*The Developing Relation Between Digital Broadcasting and the Internet*," workshop speaker, Conference on the Hong Kong TV Broadcasting Industry: Towards the 21st Century, Hong Kong, November 1998

"*Transparent Technology,"* Keynote speaker, CUE Telecon XVII, Anaheim, CA, October 1998.

"*The New World for Technology*," invited speaker, Federation of European Direct Marketing, Brussels, Belgium, April 1998.

"*Future of TV Networks*," invited panelist, Aspen Comedy Festival, Aspen, CO, March 1998.

"*The Future of Media Technology*," invited speaker, Fischer, Justus Communicacao Total, Sao Paulo, Brazil, January 1998.

"*The New Multimedia Environment*," invited panelist, United Nations World Television Forum, New York, NY, November 1997.

TED6, Technology, Entertainment & Design, invited speaker, New York, NY, September 1997.

"*The Future of Technology*," Technology Forum, California State University, Hayward, CA, May 1997.

"*The Future of the Newspaper in the Digital Age*," International Seminar on the Future of the Daily Newspaper, Belo Horizonte, Brazil, April 1997.

"*How Future Comminications Impact You*," Meetings & Exhibitions Technology Conference, Rosemont, IL, April 1997.

"*Digital Life: Media & Community in a Connected World*," ECON Zukunftstag, Dusseldorf, Germany, April 1997.

"*The Future of Technology*," Technology Forum, California State University, Hayward, CA, May 1997.

"*QoS & Mobile Multimedia*," Nomadic 97, panel member, Santa Clara, CA, August 1997.

"*Nomadicity, Wearability & The Technologies of Community*," Arthur Andersen High Tech Advanced Industry Seminar, keynote speaker, San Jose, CA, September 1997.

Speaker, TED6, Technology, Entertainment & Design, New York, NY, September 1997..

"*The New Multimedia Environment*," invited panelist, United Nations World Television Forum, New York, NY, November 1997.

"*The Impact of Future Communications on the Printing Industry*," keynote speaker at Tech Alert 96 Conference, Graphics Arts Technical Foundation, Pittsburgh, PA, January 1996

"*Internet Entertainment*," Singapore Digital Media Consortium Symposium, speaker, Singapore, February 1996.

"*How Future Comminications Impacts You*," First Swiss Telecom Symposium, speaker, Lugano, Switzerland, May 1996.

"*Telecommunications, Telematics & Social Change*," ARTIS Seminar, speaker, Firenze, Italy, June 1996.

"*The Future of Television*," Medientage Munchen '96, speaker, Munich, Germany.

"*The Future of Video Coding: What Will Be New*," International Symposium on Circuits & Systems, panel member, Atlanta, May 1996.

*"Emerging Architecture",* invited panel participant at NII 2000 Forum of the Computer Science and Telecommunications Board, Washington, DC, May 23, 1995.

*"Multimedia Revolutions: past, present and future,"* speaker at Management Circle Conference on Datenautobahn und Multimedia, Frankfurt, Germany, June 19-21, 1994.

*"Coding Content instead of Pixels",* keynote speaker at the VLBV 94 conference, Colchester, Essex, UK, April 6-8, 1994.

*"Technology Day Panel",* invited panel participant at the 1994 MTV Networks Management Retrest, San Juan, PR, February 8, 1994.

*"Selling Value in the New Media 90s"*, Guest Speaker at Advanstar Communications 1994 International Sales Meeting, Cleveland, OH, January 14, 1994.

*"The 5 Year Prospective for Digital Television",* Panel Moderator, IEEE Digital Video Workshop, Cambridge, MA, October 1993.

*"Television of Tomorrow",* Interactive Panel session at the World Economic Forum Industrial Summit, MIT/Harvard, Cambridge, MA, September 10, 1993.

*"Life After HDTV",* panel speaker at session on "MIT in the 21st Century", Enterprise '93 Conference, Boston, MA, June 17, 1993.

*"Digital Television",* invited speaker at Avanced Seminar on "Desktop Video Communications: The Final Step in the Merger of Computers and Video", sponsored by Applied Business teleCommunications, Atlanta, GA, May 3, 1993.

*"Jumping Into the Frame: Past Interaction, Into Participation",* invited speaker for AECT 1993 National Convention, New Orleans, LA, January 14, 1993.

*"Telecommunications Future",* panel speaker at the PLI Telecommunications Policy and Regulation Conference, Washington DC, December 3, 1992.

*Television of Tomorrow: HDTV or Video home computer? ",* seminar speaker at the Association Descartes Conference on "Images, Screens, Networks", Paris, France, November 27, 1992.

*"Variable Resolution Video on Demand"*, panel speaker at the EIA Digital Video Workshop, Boston, MA, October 1, 1992.

*"The Communication Revolution Now: The Atlantic Connection",* panel speaker at the 41st Annual IPI General Assembly, Budapest, Hungary, May 19, 1992.

*"Workstations of the Future: A User's Perspective"*, presenter for the IEEE Satellite Videoconference, April 30, 1992.

*"Television of Tomorrow/How Now PTV"*, presentation and panel speaker at Pacific Mountain Network Conference "Making the Most of Multichannel", La Jolla, CA, April 14, 1992.

*Television of Tomorrow",* speaker at the 22nd T&M Seminar "The Digital Challenge: Future Tools for Film & TV Makers", Stockholm, Sweden, February 20, 1992.

*"The Potential of All-digital High Definition Television Systems",* panel speaker at the Financial Times Cable Television and Satellite Broadcasting Conference, London, UK, February 19, 1992.

*"How Technology will Reshape Communication",* and *"Consumers — Taking Command of their Media Flow",* speaker at the World Communication Summit, Crans-Montana, Switzerland, October 6, 1991.

*"Advanced Television Systems: Anything but HDTV"*, invited banquet speaker at IEEE Multidimensional Signal Processing Conference, Lake Placid, NY, September 24, 1991.

*"Inventing the Future at MIT's Media Lab",* presentation to the CCIA Board of Director's meeting, Boston, MA, September 12, 1991.

*"Movies of the Future"*, speaker at the CRAI Multimedia Systems: From Technologies to Applications, Capri, Italy, June 2-7, 1991.

*"Television of Tomorrow: Signals with a Sense of Themselves"*, keynote speaker, 36th Annual IEEE International Computer Conference, COMPCON '91, San Francisco, CA, February 27, 1991.

*"Digital Television"*, banquet speaker at the 1991 SPIE Symposium on Electronic Imaging: Science and Technology, San Jose, PR, February 26, 1991.

*"The Future Path for Broadband"*, plenary session speaker at the 1990 ComForum Conference "Broadband: Converging on the Future", Orlando, FL, December 10-14, 1990.

*"Digital Video Terminals",* speaker and round table participant, EIA/IEEE 2nd International Workshop on Digital Video Communications, Cambridge, MA, November 27, 1990.

*"Computing with Feeling: Directions for the Human Interface to Personal Computing in the Coming Years"*, invited speaker at SOFTWORLD '90 Conference, Chiba, Tokyo, Japan, August 3, 1990.

*"Perspectives on Media Technology",* guest speaker at the James Martin World Seminar, (TTI), Cambridge, MA, May 2, 1990.

*"Information Technology Seminars"*, a series of talks presented at the Institute of Systems Science, National University of Singapore, Singapore, April 23-27, 1990

*"HDTV Update: Current Status, Issues and Trends",* NCGA '90 Tutorial speaker, Anaheim, CA, March 19, 1990.

*"Electronic Document Delivery"*, keynote speaker at the first Bellcore/BCC Conference on Electronic Document Delivery, New Brunswick, NJ, March 12, 1990.

*"Communications and Information in the Next Millenium"*, keynote speaker at the 1990 HIMSS Conference, New Orleans, LA, February 20, 1990.

*"Focusing on the Future of the Media"*, keynote speaker at the Digital Photography Conference, Washington DC, February 8-10, 1990.

*"Communications in the Year 2001"*, keynote speaker at the Dallas Communications Council conference "Communications: The Economic Wave of the Future", Dallas, TX, October 16, 1989.

*"Movies of the Future: Computing in your Television, and Television in your Computers"*, CCISP Seminar Series, University of Pennsylvania, Philadelphia, PA, October 11, 1989.

*"Video Technologies of the Future"*, panelist at National Communications Forum, Chicago, IL, October 3, 1989.

*"Inventing the Future"*, keynote speaker, "Interchange '89 Conference organised by Monsanto, St. Louis, MS, September 21, 1989.

"*Advances in Media Technology: The Innovations at MIT's Media Laboratory*", pre-conference workshop at HCI International '89 Conference, Boston, MA, September 18, 1989.

*"HDTV and the Future of Home Communications",* speaker at SEMI conference "HDTV: The Impact of New Age Electronics", San Francisco, CA, June 29, 1989.

*"Information in the Next Millenium",* speaker at the International Thomson Professional Publishing Conference, Boston, MA, June 28, 1989.

*"Media Technology",* keynote address, IEEE International Workshop on Microelectronics and Photonics in Communications, New Seabury, MA, June 7, 1989.

*"The Face of Communications in the Year 2001",* keynote address, Video 9 Conference and Exhibition, Quinnipiac College, CT, May 25, 1989.

*"Open Architecture Television",* speaker at University of North Carolina/IBM Technical Symposium, Chapel Hill, NC, May 17, 1989.

*"Movies of the Future",* speaker at the Image and Sound Film Festival, Den Haag, The Netherlands, April 27-28, 1989.

*"The Way We Like It: Concurrent, Redundant and Plural"*, speaker at OCRI MultiMedia '89 Conference, Ottawa, Canada, April 21, 1989.

*"Human Interfaces for Multimedia Systems",* speaker at Open Software Foundation University Symposium, Cambridge, MA, April 18, 1989.

*"The Face of Communications in the Year 2001"*, keynote speaker for "Advanced Communications Technologies in Pennsylvania and the Public Interest" seminar, sponsored by PPTN, Hershey, PA, April 6, 1989.

*"The Future of Television",* invited speaker, 99th meeting of the National Council of the Arts, Washington DC, February 3, 1989.

*"Opportunities in Communications: The Technology View"*, speaker for the San Diego Communications Council Conference on Technology, November 15, 1988, San Diego, CA.

*"Computing and Communications in the Year 2001"*, speaker for Hewlett Packard Seminar, Cupertino, CA, November 15, 1988.

*"The Future: Home Communications"*, speaker for Intel Technology Seminar, Sedona, AZ, November 2, 1988.

*"The Future: Home Communications"*, speaker for Ameritech Presidents Conference, Pheonix AZ, November 2, 1988.

*"The Face of Communications in the Year 2001"*, speaker for Ameritech Corporate Strategy Conference, Chicago, IL, October 26, 1988.

*"Media Technology",* Chairman of SIGGRAPH panel, Atlanta, GA, August 4, 1988.

*"The 135 Mb Living Room"*, speaker for ITS Seventh International Conference, MIT Cambridge, MA, June 29, 1988.

*"HDTV...The Systems Under Development"*, panelist at NAB Broadcast Engineering Conference, Las Vegas, NV, April 10, 1988.

*"News and Movies in the 135 Megabit Living Room"*, speaker for Bellcore/MIT Conference "Towards a Universal Broadband Infrastructure for the US", Salt Lake City, UT, April 7, 1988.

*"HDTV: Benefits, Costs and Issues"*, Tutorial Instructor, NCGA '88, Anaheim, CA, March 21, 1988.

*"The Future Impact of HDTV Standards and Digital Television Technologies on Computer Graphics"*, Technical Speaker for NCGA '88, Anaheim, CA, March 2, 1988.

*"Adaptive Vector Quantization of Moving Images"*, speaker at seminar in "Visual Communications", Columbia University, New York, NY, November 13, 1987.

*"New Publishing Technologies: The Day after Tomorrow"*, speaker at the American Association of University Presses' Northeastern Regional meeting, Cambridge, MA, October 18, 1987.

*"Electronic Futures: Technology Directions for Publishing"*, speaker at the Corporate Electronic Publishing Systems Conference, Boston, MA, October 28, 1987.

*"Where Do User Interfaces Come From?",* panelist at SIGGRAPH Conference, Aneheim, CA, July 1987.

*"Digital Television: An Overview"*, IEEE International Symposium on Circuits and Systems, speaker, Philadelphia, PA, May 4, 1987.

*"Interactive 3-D Imaging for Remote Presence and Simulation"*, speaker at The Institute for Graphic Communication Conference "Real-Time Stereoscopic Viceo Display System", Bedford, MA, March 24, 1987.

"Computing with Television", invited speaker for Images, Information, & Interfaces: Directions for the 1990s, New York Telephone, New York, NY, November 19, 1986

Workshop on Interactive 3-D Graphics, University of North Carolina, Chapel Hill NC, October 1986.

*"Advanced Television Concepts",* ICCE panelist for Consumer Electronics Conference, Chicago, IL, June 5, 1986.

*"Unproven Guidelines for the Human Interface"*, invited Tutorial at Eurographics, Nice, France, September 1985.

*"The Advanced Television Research Program at MIT",* HDTV Conference, invitational conference of young researchers in television, Rennes, France, September 1985.

*"Computer Graphics & the Media Technology"* Invited Speech for Texas A&M Symposium, April 1985.

*"Optical Videodiscs and Electronic Publishing"*, speaker for Continuing Education Institute, Los Angeles, June 1984.

*"Optical Storage in the House"*, presentation for Technical Opportunity Conference, San Francisco, CA, December 1983.

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