

# STUART ELLIOT MADNICK

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*John Norris Maguire Professor of Information Technology*  
Sloan School of Management

*and*

*Professor of Engineering Systems*  
Sloan School of Engineering

Massachusetts Institute of Technology

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Massachusetts Institute of Technology

Date of Birth: July 10, 1944  
Place of Birth: Worcester, Massachusetts  
Citizenship: U.S.A.

**EDUCATION**

B.S., Electrical Engineering, 1966, M.I.T.  
M.S., Alfred P. Sloan School of Management, 1969, M.I.T.  
M.S., Electrical Engineering, 1969, M.I.T.  
Ph.D., Computer Science, 1972, M.I.T.  
(Doctoral Thesis: Storage Hierarchy Systems).

**PRINCIPAL FIELD OF INTEREST**

Information Technologies (formerly called Management Information Systems)

**NAME AND RANK OF OTHER FACULTY IN SAME FIELD**

Erik Brynjolfsson, Professor  
Benjamin Grosf, Assistant Professor  
Thomas Malone, Professor  
Wanda Orlikowski, Professor  
John F. Rockart, Senior Lecturer (Emerti)  
Peter Weill, Senior Lecturer

## 1. SUMMARY OF NON-MIT EXPERIENCE

- 2000-01 Co-founder and Chairman of the Board, iAggregate Corporation, Cambridge, Massachusetts (merged with ArsDigita Corporation)  
(Developed web aggregation software based on co-authored technology patents, licensed from MIT)
- 2000 Visiting Professor, Victoria University, New Zealand
- 1998- Member of the Board, Oxford Global Resources
- 1993 Visiting Professor, Nanyang Technological University, Singapore  
Visiting Professor, Newcastle University, England  
Visiting Professor, Technion, Israel  
(On sabbatical from MIT, approximately 6 weeks at each university)
- 1985 Visiting Scholar in Computer Science, Harvard University, Faculty of Arts and Sciences  
(On sabbatical from MIT)
- 1985- Co-founder and Director, HML, Ltd., Hexham, Northumberland, England  
(Operate a luxury hotel and restaurant in a 14th century English castle)
- 1985-86 Co-founder and Member of the Board, Cambridge Institute for Information Systems, Inc., Cambridge, Massachusetts (subsequently re-named: Cambridge Technology Group)  
(Develop and deliver executive education in the field of information systems)
- 1983-85 Co-founder and Vice-Chairman of the Board, Knoware, Inc., Cambridge, Massachusetts  
(Develop strategy for educational personal computer software)
- 1980- Founder, Systems Engineering & Management Corp., Cambridge, Massachusetts  
(Consulting in the field of information systems)
- 1978-85 Co-founder and Member of the Board, Advanced Information Systems & Services, Inc., Cambridge, Massachusetts  
(Develop course curriculum, printed material, and video-tape material for the study of modern information systems)
- 1972-75 Co-founder, Member of the Board and Technical Advisor, MITROL, Inc., Waltham, Massachusetts  
(Responsible for the design and development of advanced interactive manufacturing information systems. MITROL was acquired as a subsidiary by General Electric's Information Systems Company)
- 1971-72 Principal Engineer, Honeywell Advanced Systems and Technology Organization, Waltham, Massachusetts  
(Performed research on advanced information management systems)
- 1970-71 Principal Scientist, Honeywell Information Sciences Center, Cambridge, Massachusetts  
(Performed research on the design and specification of future computer systems)

- 1968-70 Manager of Systems Development, International Computation, Inc. (INTERCOMP), Cambridge, Massachusetts  
(Responsible for the design and implementation of medical information systems and laboratory automation. INTERCOMP was acquired by Logicon, Inc.)
- 1967-69 Associate Engineer and Consultant, Lockheed Missiles and Space Company, Palo Alto Research Laboratory, Palo Alto, California  
(One of the designers of the DIALOG and RECON information retrieval systems)
- 1966-71 Systems Programmer & Consultant, IBM Cambridge Scientific Center, Cambridge, Massachusetts  
(Responsible for development of various aspects of the CP-67/CMS and VM/370 time-sharing systems with specific responsibility for the file system and SCRIPT/370 text processing system)

## 2. SUMMARY OF MIT APPOINTMENTS

- 2000- Singapore-MIT Alliance (SMA) Fellow.
- 2000- Professor of Engineering Systems, School of Engineering (joint appointment)
- 1989- John Norris Maguire Professor of Information Technologies, Sloan School of Management
- 1988-93 Leaders for Manufacturing Professor of Management Science, Sloan School of Management
- 1987- Professor, Sloan School of Management \*
- 1976-87 Associate Professor, Sloan School of Management \*
- 1972-76 Assistant Professor, Sloan School of Management \*
- 1971-72 Instructor, Department of Electrical Engineering (Developed Operating Systems course, conducted research in advanced computer systems, supervised theses).
- 1968-71 Research Assistant, Project MAC  
(Group leader Advanced Operating System project, organized 5.686, 6.79, and IAP seminars, and Instructor for Information Systems course).
- 1966-68 Teaching Assistant, Sloan School of Management
- 1965-66 Data Processing Consultant, Student Aid Center  
(Design of scholarship and loan assignment programs and data analysis packages).
- 1965-66 Systems Programmer, Civil Engineering Department  
(Development of minimum path algorithms and data extraction packages for survey data).
- 1963-65 Programmer, Mechanical Engineering Department.  
(Analysis of structure of materials by computer techniques and graphic output of vector force fields).
- 1963-65 Special Guide, M.I.T. Computation Center
- \* Details of research and teaching activities in the Sloan School are provided in the following sections.

### 3. COMMITTEES

#### *DEPARTMENT COMMITTEES*

1988-	Executive Committee, International Financial Services Research Center (IFSRC)
1986-98, 2001-02	Head, Information Technologies Group (formerly the Management Information Systems Group)
1981-82	Member, Sloan School Task Force on New Programs and Task Force Management Science
1981-	Member, Doctoral Program Committee
1979-84	Head, Management Information Systems Group
1979-84	Steering Committee, Management Science Area
1979-84	Coordinator, MIS Doctoral General Examinations
1976-96	Executive Committee, Center for Information Systems Research (CISR)
1975-	Chairman, Committee for the Search and Recruiting of MIS Faculty
1974-	Member, Center for Information Systems Research
1973-84	Chairman, East Campus Computer Services Committee
1972-	Freshman Advisor
1972-75	Coordinator, Undergraduate Research Opportunities Program (UROP)
1972-75	Member, Undergraduate Program Committee

#### *INSTITUTE COMMITTEES*

1981-82	Member, MIT Office Automation Planning Committee and Long Range Planning Sub-committee
1972-	Member, Freshman Advisory Council (FAC)

#### *LABORATORY FOR COMPUTER SCIENCE*

1976-96	Affiliate Member
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#### *MANAGEMENT OF MAJOR RESEARCH INITIATIVES*

1990-	Co-Head, Total Data Quality Management (TDQM) Initiative
1992-	Co-Director, PROductivity From Information Technology (PROFIT) Program

#### *PERSONNEL SUB-COMMITTEES*

2005-	Member, Review committees for Benjamin Grosf and Sugata Roychowdhury
2004-	Chairman, Review committee for Peter Wysocki

- 2004- Member, Review committees for Benjamin Grosf and Michael Armstrong
- 2003- Member, Review committees for Peter Wysocki and Michael Armstrong
- 2003- Member, Review committees for Benjamin Grosf, Amar Gupta, and Peter Wysocki.

#### SLOAN COMMITTEES

- 2005 Member, Executive Personnel Committee
- 2005 Member, Sloan Educational Technologies Committee
- 2005 Member, Sloan Classroom Review Committee
- 2005 Co-Director, Productivity from Information Technology (PROFIT) Initiative
- 2005 Co-Director, Total Data Quality Management (TDQM) Program
- 2004 Member, Executive Personnel Committee
- 2004 Member, Sloan Educational Technologies Committee
- 2004 Member, Sloan Classroom Review Committee
- 2004 Co-Director, Productivity from Information Technology (PROFIT) Initiative
- 2004 Co-Director, Total Data Quality Management (TDQM) Program
- 2003 Member, Undergraduate and Interdepartmental Program Committee
- 2003 Member, Sloan Educational Technologies Committee
- 2003 Member, Sloan Bidding System Review Committee
- 2003 Co-Director, Productivity from Information Technology (PROFIT) Initiative
- 2003 Co-Director, Total Data Quality Management (TDQM) Program
- 2003 Represented Sloan in the 2003 MIT Graduation Ceremonies
- 2002 Member, Undergraduate and Interdepartmental Program Committee
- 2002 Member, Sloan Educational Technologies Committee
- 2002 Member, Sloan Bidding System Review Committee
- 2002 Head, Information Technologies Group (until September 2002)
- 2002 Coordinator, IT Faculty Recruiting
- 2002 Co-Director, Productivity from Information Technology (PROFIT) Initiative
- 2002 Co-Director, Total Data Quality Management (TDQM) Program

#### MIT COMMITTEES

- 2005 Member, MIT Engineering Systems Division (ESD)
- 2005 Member, MIT Engineering Systems Education Committee

2005 Member, MIT Council on Educational Technology (MITCET)  
2005 Member, MIT Information Technology Architecture Group (ITAG)  
2005 Member, MIT OpenCourseWare (OCW) Advisory Committee  
2004 Member, MIT Engineering Systems Division (ESD)  
2004 Member, MIT Engineering Systems Education Committee  
2004 Member, MIT Council on Educational Technology (MITCET)  
2004 Member, MIT Information Technology Architecture Group (ITAG)  
2004 Member, MIT OpenCourseWare (OCW) Advisory Committee  
2003 Member, MIT Engineering Systems Division (ESD)  
2003 Member, MIT Engineering Systems Learning Center (ESLC) Committee  
2003 Member, MIT Council on Educational Technology (MITCET)  
2003 Member, MIT Information Technology Architecture Group (ITAG)  
2003 Member, MIT OpenCourseWare (OCW) Advisory Committee  
2002 Member, MIT Engineering Systems Division (ESD)  
2002 Member, MIT Engineering Systems Learning Center (ESLC) Committee  
2002 Member, MIT Council on Educational Technology (MITCET)  
2002 Member, MIT Information Technology Architecture Group (ITAG)  
2002 Member, MIT OpenCourseWare (OCW) Advisory Committee



#### 4. CONSULTING ACTIVITIES

1974	A. D. Little
1995-96	Alternative Resources
1977-87	American Telephone & Telegraph Co
1995-96	Analysis Group
2001	Artery-Pilot Bird
1997-98	Bankers Trust
1974	Borg-Warner Corporation
1992	Bull Info Sys
2000-01	Cerylion Corp
2000-01	Chestnut Partners
1982-84, 1997-98	Citibank
1975	Computer Corporation of America (CCA)
1976-77	Computer Sciences Corporation
1992	Dangel & Co
1975	Data General Corporation
1977	Dean Witter & Co., Inc.
1996-97	Deutsche Bank, Morgan Grenfeld
1996-00	FIAT/ISVOR
1972	Foxboro, Inc.
1973	G. A. Saxton
1975	G. S. Grumman & Associates, Inc.
1998-99	Gatsby & Hannah (Ceska Sporitelna v. Unisys Corporation)
1980-81	H. H. Aerospace Corporation
1972-73	Honeywell Information Systems, Inc.
1994	IBM AS/400 Group
1972-73	IBM New England Development Center
1990	Index Group
1999	In-Q-It (CIA)
1973	Intermetrics
1983-84	Israeli Embassy, Washington, D.C. (*)
1995	John Hancock
1990	Lotus Development Corp
1972	Martin-Marietta, Inc
1983-84	Massachusetts Dental Association (*)
1976	McCaffery, Seligman & von Simpson, Inc.
1983-84	MIT Admissions Office (*)
1995	MITRE

1972	Naval Underwater Systems Center
2000-01	NERA (Microsoft Class Action and Microsoft European Commission)
1973	Olivetti
1992-94	Open Environment Corporation
1973	Pennsylvania Department of Education
1974-75	Q. E. D. Information Sciences, Inc. (in conjunction with Babson College)
1974	Research and Consulting, Inc.
1996-98	San Paolo Bank - Italy
1974	Shell Oil Company
1973	Software et Engineering des Systems d'Informatique et d'Automatique (SESA)
1998-99	Sullivan & Cromwell (Bristol v. Microsoft)
1998-99	T. F. Software
1998-99	Teradyne
2000	UNUM Provident
2000-01	Weil, Gotshal & Mange, LLP (AA v AC Arbitration)

(\* ) = without compensation.

## 5. PROFESSIONAL ACTIVITIES

### Associate Editor,

*ACM Transactions on Database Systems*, 1975-86.  
*International Journal of Computers and Data Bases*, 1975.  
*Performance Evaluation Review*, 1972-74.

### Board of Governors,

IEEE Computer Society (40,000 members), 1979-81.

### Chairman,

IEEE Technical Committee on Database Engineering, 1980-82.

### Committee Member,

ANSI/SPARC Operating System Command Language Task Group (OSCLTG), 1975-76.  
ARPA Technical Review of Datacomputer Project, 1975.  
IEEE Technical Committee on Database Engineering, 1975-78.  
Task Force on Engineering of Software (Sponsored by NSF), 1975.

### Conference Co-Chairman,

Third International Conference on Very Large Data Bases (VLDB), Tokyo, Japan, October 1977.  
Thirteenth International Conference on Very Large Data Bases (VLDB), Brighton, England, September 1987.  
Executive Committee, VLDB Endowment.

### Moderator,

"Programming Languages Workshop: Network Languages", NOC-69 (Network of Computers-69) sponsored by NSA, Washington, DC, October 1969.

### Panelist,

Information Systems Panel, MIT Sponsored Conference, "Technological Innovation and Economic Development: Has the U.S. Lost the Initiative?," Washington, DC, April 1976.  
"The Interaction of New Technology and Systems Architecture", National Computer Conference, Anaheim, CA, May 1975.  
"Virtual Computer Systems", National Computer Conference, New York, NY, 1973.  
"Virtual Computer Systems", IEEE Computer Conference, Boston, MA, September 1971.

### Program Committee,

ACM-SIGMOD International Conference on Management of Data, Washington, DC, June 1976.  
Conference on Applications Development Systems, San Jose, CA, March 1980.  
IEEE International Computer Software and Applications Conference (COMPSAC 77), Chicago, IL, November 1977.  
International Conference on Applications of Databases, June 1994.  
International Conference on Entity-Relationship Approach to Systems Analysis and Design, Los Angeles, CA, December 1979.  
International Conference on Management of Data, Santa Monica, CA, May 1980.  
International Conference on Very Large Data Bases, Boston, MA, September 1975.  
International Conference on Data Bases: Improving Usability and Responsiveness, Haifa, Israel, August 1978.

International Workshop on Data Base Machines, San Diego, CA, September 1982.  
Sixth Workshop on Computer Architecture for Non-Numeric Processing, Hyeres, France, June 1981.

Referee,

ACM Computing Surveys, 1977-83.  
ACM Transactions on Database Systems, 1976.  
Annals of Economic and Social Measurement, 1975.  
Communications of the ACM, 1974-78.  
IBM Journal of Research and Development, 1974.  
IBM Systems Journal, 1974-78.  
IEEE Transactions on Computers, 1975-83.  
IEEE Transactions on Software Engineering, 1976-78.  
International Conference on Applications of Databases, 1994.  
National Computer Conference, 1975.  
NSF Research Proposals, 1977-78.  
Operations Research, 1975.  
Symposium on Operating Systems Principles, 1975.  
U.S. Army Research Office Proposals, 1977-78.  
USA-Japan Computer Conference, 1975.  
VLDB IV Conference, 1978.

Reviewer,

ACM Computing Reviews, 1968-78.  
Computer Science and Applied Mathematics Series, Prentice-Hall, Inc., 1978.  
Computer Series Textbooks, Houghton-Mifflin Company, 1973.  
Computer Series Textbooks, Allyn and Bacon, Inc., 1973.

Session Chairman,

"Case Studies", Twelfth International Conference on Very Large Data Bases, Kyoto, Japan, August 1986.  
ACM-SIGMOD Conference on Management of Data, Boston, MA, May 1979.  
"Performance Evaluation Panel", International Symposium on Computer Performance Modeling, Measurement, and Evaluation, Cambridge, MA, March 1976.  
"System and Memory Architecture", International Conference on Very Large Data Bases, Boston, MA, September 1975.

Session Organizer,

"Impact of New Technology on Hierarchical Memory and Storage Systems", IEEE International Conference, New York, NY, April 1975.  
"Microprogramming Techniques", IEEE Computer Conference, Boston, MA, September 1971.  
"Processor Memory Switch Architectures", National Computer Conference, Anaheim, CA, May 1975.  
"Strategic Uses of Very Large Data Bases", VLDB '87, Brighton, England, September 1987.

Steering Committee,

Workshop on Information Technology & Systems (WITS), 1991-

Trustee,

Very Large Data Base (VLDB) Foundation, 1982-  
[Treasurer, 1990-92; Vice President 1992- ]

## **6. PROFESSIONAL SOCIETIES**

The Institute of Management Science (TIMS).

Institute for Electrical and Electronics Engineers (IEEE)  
and its Technical Committee on Data Base Engineering (TC-DBE) and Technical Committee  
on Software Engineering (TC-SE).

Association for Computing Machinery (ACM)  
and its Special Interest Groups (SIGs) on Business Data Processing (SIGBDP), Programming  
Languages (SIGPLAN), Microprogramming (SIGMICRO), Minicomputers (SIGMINI),  
Performance Evaluation (SIGMETRICS), Operating Systems (SIGOPS), Computer  
Architecture (SIGARCH), and Management of Data (SIGMOD).

Association for the Advancement of Medical Instrumentation (AAMI).

American Production and Inventory Control Society (APICS).

The Society for Management Information Systems (SMIS).

Sigma Xi, The Scientific Research Society.

The Boston Computer Society.

## 7. SUBJECTS TAUGHT

### 7.1 REGULAR TEACHING

SIP: "Oh, So That is What you Meant! The Interplay of Data Quality and Data Semantics"  
Spring 2004

SIP: "RFID IT: Information Infrastructure Needed for Effective Utilization of RFID AutoID technologies"

Fall 2004

Fall 2005

SMA 5506 Database Technologies, Summer 2003, as part of the MIT-Singapore Alliance (SMA).

August 2002

August 2003

August 2004

August 2005

15.515 Information and Decision Systems I

Spring 1973

15.561 Introduction to Computer and Information Systems

Summer 1978

Summer 1977

Summer 1976 [C=4.3 P=4.5]

Fall 1975 [C=3.8 P=4.2]

Summer 1975 [C=4.2 P=4.6]

Fall 1974 [C=3.8 P=3.9]

15.564 Management Information Technology I

Spring 1987 [C=4.63/4.19 P=4.79/4.05]

Fall 1986 [C=4.58/4.16 P=4.95/3.97]

Spring 1986 [C=4.46/4.12 P=4.73/4.04]

Fall 1984 [C=4.62/4.15 P=4.71/3.97]

Spring 1984 [C=4.55/4.17 P=4.88/3.97]

Fall 1983 [C=4.67/4.11 P=4.82/3.97]

Spring 1983 [C=4.43/4.05 P=4.86/4.00]

Fall 1982 [C=4.79/3.97 P=4.94/3.98]

Spring 1982 [C=4.50/4.06 P=4.61/3.84]

Fall 1981 [C=4.42/3.82 P=4.63/4.00]

Spring 1981 [C=4.86/3.99 P=4.86/3.84]

Fall 1980 [C=4.74/3.80 P=4.70/3.68]

Spring 1980 [C=4.20/3.91 P=4.40/3.81]

Fall 1979 [C=4.56/3.83 P=4.88/3.66]

Fall 1975 [C=4.6 P=4.6]

Fall 1974 [C=4.2 P=4.0]

Spring 1974 [C=4.5 P=4.9]

Fall 1973 [C=4.5 P=4.6]

15.565 Management Information Technology II

Spring 2005

Spring 2003

Spring 1979 [C=4.89/4.01 P=4.56/3.76]

Spring 1978 [C=4.50 P=4.75]

Fall 1977 [C=3.8 P=3.7]

Spring 1977 [C=4.2 P=4.3]

Fall 1976 [C=4.3 P=4.5]

15.565J Digital Evolution: Managing Web 3.0

Spring 2014

15.568 Management Information Systems

Fall 1972

15.571 Advanced Computer Systems

Spring 1975 [C=4.3 P=4.6]

Fall 1974 [C=5.0 P=5.0]

Spring 1973

15.578 Global Information Systems: Communications and Connectivity among Information Systems

Spring 2005

Spring 2003

Spring 2002

15.579 Communications & Connectivity

Fall 1987 [C=x.x P=y.y]

15.599 Doctoral Workshop in MIS

Spring 1986 [C=4.00 P=3.83]

15.963 Management Information Systems Practicum

Spring 1977

15.967 Seminar on Advanced Information Systems Topics

Spring 1978 [C=4.67 P=4.00]

15.THP Structured Thesis: Gaining Strategic Advantage through Composite Information Systems

Spring 1986

Notes:

1. The numbers immediately following the term indicate Sloan Student Evaluation Ratings for the subject. This information is available for most subjects in the period 1974-86.
2. The number after the C= is the rating for "content", the number after the P= is the rating for

"presentation". Both ratings are on a 5-point scale with 5=excellent and 1=poor.

3. The number after the / indicates the mean rating for all Sloan subjects and faculty, when that data is available. (Thus, P=4.86/4.00 means the students evaluated my presentation as 4.86 out of 5.00 compared with a mean evaluation of 4.00 out of 5.00 for all Sloan faculty that term). For periods where term-by-term mean ratings are not available, the mean rating for all subjects and faculty were about 3.76 for "content" and 3.58 for "presentation".
4. During these years considerable effort has been spent on curriculum development for the "core" MIS subjects 15.561, 15.564, 15.565, and 15.571. This effort to revise and improve these subjects appears to have been fruitful based upon measures such as significant increases in enrollment and high student evaluation ratings. Textbooks, supplemental materials, and computer projects for 15.564, 15.565, and 15.571 have been developed to facilitate the teaching of these subjects at other universities.



## 7.2 SHORT COURSES

1978-83	Information Systems Technology, MIT Special Summer Session Program (15.65s) Summer 1984 [C=4.91 P=4.96] Summer 1983 [C=4.69 P=4.84] Summer 1982 [C=4.48 P=4.86]
1978-82	Advanced Software Concepts: Operating Systems (15.25s) Summer 1981 [C=4.81 P=4.90]
1979	White Collar Crime II: Computer Security, Ohio State University, May 1979.
1977	Computer Based Information Systems Technology -- Database Systems, Telecommunications, and Performance Evaluation, MIT Special Summer Session Program (15.56s)
1977	Advanced Software Concepts -- Operating Systems, MIT Special Summer Session Program (15.57s)
1975	Tutorial on Operating Systems, University of California at Riverside, Applied Science Program
1975	Data Base Systems Management, University of Maryland, 1975 Summer Institute
1975-86	Current Issues in Information Systems Research: A Managerial Perspective, MIT Center for Information Systems Research Program
1973-76	Advanced Software Engineering -- Focusing on Operating Systems, MIT Special Summer Session Program (15.25s)
1974-75	Advanced Programming Techniques, Babson College, Electronic Data Processing Education Program (EDPEP)
1971-75	Seminar on Computer Architecture, MIT January Independent Activity Period (IAP) course

## 8. THESIS SUPERVISION

### DOCTORAL

1. "Using Information Technology to Exchange Health Information among Healthcare Providers: measuring Usage and Understanding Value," Robert Rudin, August 2011 (ESD)
2. "Leveraging Social Information Systems: Using Blogs to Inform Technology Strategy Decisions," Satwik Seshasai, May 2011
3. "Effective Information Integration and Reutilization: Solutions to Technological Deficiency and Legal Uncertainty", Hongwei Zhu, September 2005 (TMP)
4. "Information Integration Using Contextual Knowledge and Ontology Merging", Ayuk Firat, September 2003.
5. "Attribution Principles for Data Integration: Technology and Policy Perspectives", Tom Lee, February 2002, (TMP)
6. "Metrics for Object-Oriented Software Design", Shyam Chidamber, 1994 (Reader)
7. "Personal Portable Technologies, Job Characteristics, and Worker Effectiveness: A Field Study of Service Personnel", Keri Ostrofsky, 1992 (Reader/Harvard Business School)
8. "A Knowledge-Based Preprocessor for Approximate Joins in Improperly Designed Transaction Databases", Lloyd Brodsky, 1990 (Supervisor)
9. "Knowledge Processing for a Construction Management Database", Ming-Teh Wang, December 1988 (Reader)
10. "Performance Evaluation of the INFOPLEX Database Computer: A Flow Unbalanced General Queueing Network Analysis", Rich Wang, August 1984 (Supervisor)
11. "The Dynamics of Software Development Project Management: A Systems Dynamics Perspective", Tarek Abdel-Hamid, January 1984 (Supervisor)
12. "The Hierarchical Database Decomposition Approach to Database Concurrency Control", Mei Hsu, October 1983 (Supervisor)
13. "The Value of Monitoring and Information Requirements Analysis", Michael Treacy, 1983 (Reader)
14. "A Systematic Methodology for Designing the Architecture of Complex Software Systems", Sidney Huff, 1979 (Supervisor)
15. "Data Storage Hierarchy Systems for Data Base Computers", Chat-Yu Lam, 1979 (Supervisor)
16. "Influence from Information Technology on Industry Cycles: A Case Study in Manufacturing Industry", John Morecroft, 1979 (Reader)
17. "Design Issues in Distributed Management Information Systems", Jacob Akoka, 1978 (Reader)
18. "GPES: A General Purpose Process Engineering System", Mohammad Arab-Ismaili, 1978 (Reader)
19. "A Systematic Approach to the Design and Structuring of Complex Software Systems", Rafael Andreu, 1978 (Supervisor)
20. "Performance Evaluation of a Multiprocessor in a Real Time Environment", Jaynarayan Lala, 1976 (Reader)

21. "Timepattern Analysis in School Scheduling", James Linderman, 1975 (Supervisor)
22. "Program Restructuring for Virtual Memory Systems", Jerry Johnson, 1974 (Supervisor)

#### MASTERS

23. "Improving Trade Visibility and Fidelity in Defense Requirements Portfolio Management: A Formative Study of the Joint Capabilities Integration and Development System using Enterprise Analysis and Semantic Architecture Engineering", L. Najeeb Ahmed, June 2014 (SDM)
24. "CyberSafety: A Systems Thinking and Systems Theory Approach to Managing Cyber Security Risk", Hamid Salim, June 2014 (SDM)
25. "Using Web Data and Services: Technology, Theory and Evidence", Xitong Li, June 2014
26. "Emergence and Taxonomy of Big Data as a Service", Benoy Bhagattjee, February 2014 (SDM)
27. "Designing Personal Assistant Software for Task Management Using Semantic Web Technologies and Knowledge Databases," Purushotham Botla, June 2013 (SDM)
28. "Issues in Strategic Management of Large-Scale Software Product Line Development," Jean-Baptiste Henri Nivoit, June 2013 (SDM)
29. "Analysis of Data Virtualization & Enterprise Data Standardization in Business Intelligence," Laljo John Pullokkaran, June 2013 (SDM)
30. "Organizational Challenges in Cloud Adoption and Enablers of Cloud Transition Program," Sneha Rajendram, June 2013 (MSMS)
31. "Challenges in Implementing Enterprise Resource Planning (ERP) System in Large Organizations: Similarities and Differences Between Corporate and University Environment," Goeun Seo, June 2013 (MSMS)
32. "Inter-Organizational Information Sharing of Customer Data in Retail," John Tengberg, June 2013 (MSMS)
33. "Cloud Adoption Model for Governments and Large Enterprises," Hrishikesh Trivedi, June 2013 (MSMS)
34. "Understanding Organizational Traps in Implementing Service-Oriented Architecture," Xitong Li, February 2013 (MS thesis)
35. "Cloud Computing," Eugene Gorelik, January 2013 (SDM)
36. "Strategic Philanthropy for Cyber Security: An Extended Cost-Benefit Analysis Framework to Study Cybersecurity," Yiseul Cho, June 2012 (TPP)
37. "Agile Project Dynamics: A Strategic Project Management Approach to the Study of Large-Scale Software Development Using System Dynamics," Firas Glaiel, June 2012 (SDM)
38. "Data Quality Enhancement in Oil Reservoir Operations: An Application of IPMAP," Paul Hong-Yi Lin, June 2012 (SDM)
39. "Modeling Government ERP Acquisition Methods Using System Dynamics," Farrah Tazyeen, June 2012 (SDM)
40. "How Companies Can Leverage Crowdsourcing," Sunny Cheung, February 2012 (SDM)
41. "Developing a Global Deployment Strategy for Implementation of a Cold Chain Manufacturing

Execution System (MES),” Todd Waldron, May 2011 (LGO)

42. “Integration of distributed and heterogeneous information for public-private policy analyses”, David Su-Kai Cheng, June 2004 (TPP + EECS)
43. “A Taxonomy and Analysis of Web Wrapping Technologies”, Shin Wee Chuang, June 2004 (TPP + CEE)
44. “Context Mediation Approach to Improved Interoperability amongst Disparate Financial Information Services”, Sajindra Kolitha Bandara Jayasena, June 2004 (SMA CS)
45. “Feedback Loops in Educational Environments using Web-Based Survey Tools: New Technology Development and Three Implementation Case Studies”, Benjamin Spead, June 2004 (TPP + EECS)
46. “Context Mediation: Ontology Modeling using Web Ontology Language (OWL)”, Philip Tan, June 2004 (SMA CS)
47. “Challenges in the Adoption and Diffusion of Web Services in Financial Institutions”, Paulo Guilherme Vita, June 2004. (MOT)
48. “Virtual Merging of Ecoin Applications and Guidelines for Building Ontologies”, Faisal Anwar, May 2004 (EECS)
49. “Banking Channel Management – Global Trends and Strategies”, Renato Teixeira Catalan, May 2004 (MOT)
50. “CLAMP: Application Merging in the ECOIN Context Mediation System using the Context Linking Approach”, M. Bilal Kaleem, August 2003. (EECS)
51. “Corporate Householding Knowledge Engineering and Processing Using Extended COIN”, Xiang (Angela) Xian, June 2003 (EECS)
52. “Enterprise Software Architecture & Financial Services Industry – Future Trends, Challenges & Frameworks” Ahmad Shuja, June 2003 (MOT)
53. “Metadata Representation and Management for Context Mediation”, Philip Lee, June 2003 (EECS)
54. “Barriers to Global Financial Account Aggregation and Recommendations to Overcome Them”, Ee-Leen Tan, February 2003 (TPP)
55. “Barriers to Global Financial Account Aggregation and Recommendations to Overcome Them”, Ee-Leen Tan, September 2002 (TPP)
56. “Study of Integration Technology and its Roles in Enhancing the Business Value of IT focusing on Context Interchange System”, Myung-Jae Ryoo, June 2002 (MOT)
57. “A Technology and Policy Analysis for Global E-Business”, Hongwei (Harry) Zhu, June 2002 (TPP)
58. “Capabilities Aware Planner/Optimizer/Executioner for COnText INterchange Project”, Tarik Alatovic, February 2002 (EECS)
59. “Graphical Metadata Management for the Context Mediation System”, Usman Mobin, February 2002 (EECS)
60. “A Technology Analysis on Mobilizing Corporate Data”, Ambrose Kam, January 2002 (SDM)
61. “An Open Architecture for Data Environments Based on Context Interchange”, Maria Elena Neira, 1995 (Supervisor)

62. "Information Technology education: Developing Client Server Material for the Sloan Master's Program", Beville Graham St. Clair Jones, 1994 (Supervisor)
63. "Analysis of the Strategic Information Technology Track with Emphasis on Internships", Jens Haupt, 1994 (Supervisor)
64. "A CIM Integration Framework for Pharmaceutical Operations", Parkson Chao, 1992 (Supervisor)
65. "Enterprise Systems Management in a Distributed Computing Environment", Charles H. Rutledge, Jr., 1992 (Supervisor)
66. "Data Browser Interface for the Composite Information System", Thomas H. Parker, 1991 (Supervisor)
67. "Technologies and Policies for the Integration of Financial Services Industry Across the European Communities", Usman A. Ghani, 1991 (Supervisor)
68. "The Design of Global Financial Systems: A Case Study", Shailendra Krishna, 1990 (Supervisor)
69. "Duplicate Entry Detection in Mailing and Participating Lists", Herber Regal Norckauer, Jr., 1990 (Supervisor)
70. "Name Management Strategy for Database Integration", Almudena Arcelus, 1990 (Supervisor)
71. "The Reality of Systems Development: A Case Study at the Sloan School of Management", Leslie Lafer McCafferty, 1990 (Supervisor)
72. "Risk Management in Japanese Banks", Nemoto Takehiko, 1990 (Supervisor)
73. "Technologies and Policies for the Development of Composite Information Systems in Decentralized Organizations", Bertrand Rigaldes, 1990 (Supervisor)
74. "Use of Heterogeneous Data Sources: Three Case Studies", David B. Godes, 1989 (Supervisor)
75. "A Knowledge-Based Approach toward Integrating International On-Line Databases", Maria L. Paget, 1989 (Supervisor)
76. "Multi-Attribute Partitioning Methods for Associative Database Systems", Harold A. Stern, 1989 (Supervisor)
77. "Networking and Connectivity in an Engineering Company", Maurice El-Khaouam, 1988 (Supervisor)
78. "Strategic Impact of Communication Networks of the Financial Services Industry", Anand S. Parikh, 1988 (Supervisor)
79. "Distributed Database Systems: A Comparison between ORACLE and INGRES", Robert W. Gref, III, 1987 (Supervisor)
80. "Standards for Data Exchange in an Integrated Environment: A Methodological Approach", Maher Kallel, 1987 (Supervisor)
81. "Interfacing Objects and Databases", Samuel P. Levine, 1987 (Supervisor)
82. "Gaining Strategic Advantage through Composite Information Systems", Joseph L. Massimo, III, 1987 (Supervisor)
83. "Integrating Systems for Financial Institutions using Composite Information Systems", Maria de las Nieves Rincon, 1987 (Supervisor)

84. "A Knowledge-Based System for Resolving Semantic Conflicts: A Problem of Integrating Heterogeneous DBMS's", Marina Pocaterra Silva, 1987 (Supervisor)
85. "Data Communications Networks: A Comparative Evaluation of the MIT and Harvard Environments", Philip Seung-Ho Yoo, 1987 (Supervisor)
86. "A Study of Development Methodologies for Communications Software", Bruce Gobioff, 1984 (Supervisor)
87. "Transaction Analysis as a Basis for the Rapid Development of Management Information Systems for Small Businesses", David C. Hite, III, 1984 (Supervisor)
88. "SCRIPT to RUNOFF Conversion Program", Ly Thien Hoang, 1983 (Supervisor)
89. "An Information System to Support Admissions", Keith Woodward, 1982 (Supervisor)
90. "A Comparative Study of Software Design Methodologies", Michael Yeh, 1982 (Supervisor)
91. "INFOSAM - A Sample Database Management System", Bruce Blumberg, 1981 (Supervisor)
92. "A Job Queuing Program for the Management Information Systems Courses", Richard Denker, 1980 (Supervisor)
93. "Virtual Information in the INFOPLEX Database Computer", Larry Krakauer, 1980 (Supervisor)
94. "Charge-Back in the Distributed Network", Theresa Ravese, 1980 (Supervisor)
95. "Properties of Reference Algorithms for Multi-Level Storage Hierarchies", Michael Abraham, 1979 (Supervisor)
96. "A Closer Look at Database Access Patterns", Susanne Robidoux, 1979 (Supervisor)
97. "Evaluating Database Management Systems: A Framework and Application to the Veteran's Administration Hospital", Mohammad Dadashzadeh, 1978 (Supervisor)
98. "An Investigation of Cluster Analysis Techniques as a Means of Structuring Specifications in the Design of Complex Systems", Tim Holden, 1978 (Supervisor)
99. "Locality in Logical Database Systems: A Framework for Analysis", Edward McCabe, 1978 (Supervisor)
100. "Centralization vs. Decentralization of Information Systems for the City of Boston", Thomas DeCanio, 1977 (Supervisor)
101. "A Methodology to Aid in the Centralization-Decentralization Decision for Large Decentralized Organizations", John Hussey, 1977 (Supervisor)
102. "Planning the Installation of a Data Base Management System", Luther Goodie, 1977 (Supervisor)
103. "Hospital Information Systems: A Guide for Management Planning", Eric Kurtz, 1977 (Supervisor)
104. "Software Package Evaluation: Application to a Personnel System for the City of Boston", Susan Prytherch, 1977 (Supervisor)
105. "Investigation of a Large-Scale Distributed Database", Anthony Smith, 1977 (Supervisor)
106. "Computerization of Boston City Hall's Personnel System", Rinaldo Spinella, 1977 (Supervisor)
107. "Selecting a Minicomputer: A Framework and Application to the Sloan School of Management", Barry Zack, 1977 (Supervisor)

108. "A Decision Framework for Consumer-Oriented Electronic Funds Transfer Systems", Richard Carrion and Robert Smith, 1976 (Supervisor)
109. "A Framework for Computer-Based Evaluation of Highway Projects in Developing Countries", Jean-Michael Fay, 1975 (Supervisor)
110. "Simulation of IBM/370 Input/Output", Antonio Gilineau, 1976 (Supervisor)
111. "Materials Requirements Planning: A Study", Ajit Kanodia, 1976 (Supervisor)
112. "A Grading Report Generator", Ronald Law, 1976 (Supervisor)
113. "The Family of Operating Systems: A Test Case", Rosita Russell, 1976 (Supervisor)
114. "A Study of the Application of Computer Technology in Retail Stores", Robert Klimm and James Montgomery, 1975 (Supervisor)
115. "Decision Rules for the Automated Generation of Storage Strategies in Data Management Systems", Grant Smith, 1975 (Supervisor)
116. "Management Information Systems -- A Comparison of the Network and Relational Models of Data", Charles Ziering, Jr., 1975 (Supervisor)
117. "Computer Services for Business Schools: A Procedure for Analysis and Application to the Sloan School of Management", Doron Holtzer and Loretta Patzelt, 1974 (Supervisor)
118. "Centralize or Decentralize? A Study of the Data Processing Requirements of the Research Department of the Federal Reserve Bank of Boston", Donald Isaacs, 1974 (Supervisor)
119. "A Parameterized Model for Selecting the Optimum File Organization in Multi-Attribute Retrieval Systems", Jack Shachat, 1974 (Supervisor)
120. "Virtual Information in General Data Base Systems", Howard Schutzman, 1974 (Supervisor)
121. "Specification and Design of a Flexible Information Management System for Large Data Bases", Nicola Szasz, 1974 (Supervisor)
122. "Examination and Modeling of a Prototype Information System", Richard Akemann, 1973 (Supervisor)
123. "Manufacturing Information Systems and Requirements Planning: An Analytical Survey", Samuel Lasry, 1973 (Supervisor)
124. "A Model of a Multiprogrammed Demand Paging Computer System", Judith Piggins, 1973 (Supervisor)
125. "Computer Security: A Comprehensive and Annotated Bibliography", John Scherf, 1973 (Supervisor)
126. "Multiprogramming in a Page on Demand Computer System: Performance Models and Evaluation", David Schwatz, 1973 (supervisor)
127. "An Evaluation of Text Processing Systems", David Urbani, 1973 (Supervisor)

#### *BACHELORS*

128. "FareSearch Finder", Lindsey Christian & Patrick De Suza, May 2005 (EECS)
129. "An Intelligent Mechanism for Non-Primary Foreign Key Joints in the CIS / TK System", Bonnie Catherine Scurlock, 1991 (Supervisor)

130. "The Strategic Implementation of a Data Dictionary within Information Systems Architectures: The Insurance Company Case", Dino E. Browne, 1991 (Supervisor)
131. "An Enhanced Architecture for Composite Information Systems", Rebecca Y. Kao and Terence M. Sim, 1990 (Supervisor)
132. "Enhancement of the Communication Server in the Composite Information System", Boniface Ayisi Makatiani, 1990 (Supervisor)
133. "Local Query Processor Manager for the Composite Information Systems / Tool Kit", Min-yuan Tung, 1990 (Supervisor)
134. "The Role of Composite Information Systems: The Citibank Case", Dana Rachel Pressman, 1990 (Supervisor)
135. "An Architecture, Design, and Implementation of a Communications Server to Access Disparate Databases", Francis C. K. Gan, 1989 (Supervisor)
136. "Optimizing Information Retrieval From Disparate Menu Driven Systems", Howard L. Gerber, 1989 (Supervisor)
137. "Addition of a New RDBMS to the 'Access Field' of the CIS/TK System", Gautam A. Gidwani, 1989 (Supervisor)
138. "PC Front End and Network Back End for the Composite Information System Tool Kit", Wilberto Martinez, 1989 (Supervisor)
139. "Data Connectivity for the Composite Information System / Tool Kit", Toon King Wong, 1989 (Supervisor) [Recipient of the 1989 Award for the Best Computer Science Thesis in the MIT EECS Department]
140. "Enhancing Application Model Capabilities on a Composite Information System", Dennis G. Vidach, 1989 (Supervisor)
141. "Leaders for Manufacturing Program Electronic Mail Network", James C. Yao, 1989 (Supervisor)
142. "Parallel Sorting and Relational Data Base Operators on the Connection Machine", Abel Tong, 1985 (Supervisor)
143. "MIT Faculty Club Information System", Ridvan Akkurt, 1983 (Supervisor)
144. "A Classification Scheme for Database Machine Architectures", Herbert Stortz, Jr., 1983 (Supervisor)
145. "A Relational View Facility for the INFOPLEX Database Computer", Brian Feldman, 1982 (Supervisor)
146. "Virtual Information Facility of the INFOPLEX Software Test Vehicle (Part I)", Jameson Lee, 1982 (Supervisor)
147. "N-ary Level Design of the INFOPLEX Software Test Vehicle", David Lui, 1982 (Supervisor)
148. "Virtual Information Facility of the INFOPLEX Software Test Vehicle (Part II)", Peter Lu, 1982 (Supervisor)
149. "Shell: A Simulator for the Software Test Vehicle of the INFOPLEX Database Computer", Tak To, 1981 (Supervisor)
150. "Design and Implementation of an IBM Assembly Language Assembler", Hong Ong, 1980 (Supervisor)



151. "Hierarchical File System Functions on Time Sharing Minicomputers", Michael D'Amato, 1975 (Supervisor)
152. "Cost Reduction of Student Programming Exercises", Paul Gregory III, 1975 (Supervisor)
153. "A Placement Office Student Reservation System", Margaret Krupp, 1975 (Supervisor)
154. "A FORTRAN Simulator of the IBM System/370 Computer", Howell Richards, 1975 (Supervisor)
155. "A Computer Based Student Information System -- Sloan School of Management", Fehmi Sami, 1975 (Supervisor)
156. "A Direct Linking Loader", Michael Share, 1975 (Supervisor)
157. "Simulation of a Multiple Processor IBM System/370 with Associated I/O Equipment", William Silver, 1975 (Supervisor)
158. "Interconnecting IBM 2741 Communications Terminals to Prime-300 Computers", John Woodward, 1975 (Supervisor)
159. "Virtual Fields in a Database Management System", Charles Ziering, Jr., 1975 (Supervisor)
160. "The Design of a Generalized Data Base Management System", Matthew Fowler, 1974 (Supervisor)
161. "A Device Management Simulator", Michael Knaur, 1973 (Supervisor)
162. "POS -- Pedagogical Operating System", Richard Swift, 1973 (Supervisor)
163. "A Design Analysis of Dynamic Linking and Loading of Microprograms", John Wright, 1973 (Supervisor)

*\*To save space, only theses for which I was the Supervisor have been included in the Masters and Bachelors sections above. Theses for which I was only a Reader have been omitted.*

## 9. RESEARCH PROJECT SUPERVISION (Principal Investigator or co-PI)

Jan 2011 – Dec 2011	Chevron Global Upstream, “Collaborative Research on Application of and Experimentation with Information Product Map (IPMAP) Methodology for Information Quality (IQ) Analysis,” \$330,000, (OSP 6923284).
Nov 2010 – March 2012	Lincoln Laboratory – Defense Intelligence Agency (DIA), “Joint Research on Understanding the Challenges to Net-Centric Systems and Mitigating Approaches,” \$689,000, (OSP 6923013).
Oct 2010 – Dec 2011	State Farm Insurance Company, “Identifying and Implementing a Winning Aggregation Strategy,” \$295,000, (OSP 6922971).
Sept 2007 – April 2011	Mubadala Development Company, PJSC (Abu Dhabi – Masdar Institute of Science and Technology), “Semantics-Enabled Technology Forecasting,” \$650,000, (OSP 6916738)
July 2007 – Feb 2009	USAF AFRL (IARPA), “ProActive Intelligence (PAINT),” \$806,151, (OSP 6915805)
April 2007 – March 2008	Singapore Defense Science and Technology Agency (DSTA), “Phase 2: Context Knowledge Management Approach to Armament Safety Management (Dynamics of Vehicle Safety),” \$117,824, (OSP 6915187)
April 2007 – Oct 2007	National Security Innovations, Inc. – “Sudan Stability Assessment Model,” \$84,969 (OSP 6915412)
April 2006 – March 2007	Singapore Defense Science and Technology Agency (DSTA), “Phase 1: Context Knowledge Management Approach to Armament Safety Management,” \$107,173, (OSP 6899317)
August 2006 – Oct 2006	Knowledge Base Terrorism Research Inc, “Research on Cross-Reference Aggregation,” \$50,000, (OSP 6914119)
Oct 2005 – May 2006	Cisco Systems, “Toward Total Security Quality Management – Part 2,” \$150,000, (OSP 6898948)
Oct 2005 – May 2006	MITRE Corporation, “Context Mediation in Support of the MOIE,” \$95,000, (OSP 6899028).
Aug 2005 – Sep 2005	MITRE Corporation, “MITRE-MIT Task Order 4,” \$10,000, (OSP 6898420).
April 2005 – Sep 2005	Cisco Systems, “Toward Total Security Quality Management – Part 1,” \$100,000, (OSP 6897925)
Feb 2005 – June 2008	DARPA/USAF -- Simulation & Analysis Center (SAC), “Phase 1: Understanding & Modeling Insurgency, Terrorists, and Stability in Support of the Global War on Terrorism: Exploiting System Dynamics” and “Phase 2: Identifying Unintended Consequences,” \$690,425, (OSP 6897520)
Feb 2005 – March 2006	DARPA/USAF, “Understanding and Modeling State Failure,” \$346,425, (OSP 6897520)
May 2004 – Sep 2004	MITRE Corporation, “Research Project in Context Mediation with MITRE,” \$28,500.00, (OSP 6896562).
June 2003 – May 2004	Center for eBusiness @MIT / Suruga Bank, “The Challenge of Creating New Banking,” \$100,000, (OSP 6895131).
Oct 2002 – Sep 2003	Malaysia University of Science and Technology (MUST)-Motorola, “Intelligent Information Integration,” \$120,000.

Sept 2001 – Feb. 2003	Center for eBusiness @MIT / Vision Fund, “Globalization of eBusiness,” \$75,000, (OSP 6892455).
Oct 2000 – Sept 2003	MITRE Corporation, “Collaboration between MITRE and MIT on the Semantic Web,” \$360,000, (OSP 6891666).
Sept 2000 – August 2002	Banco Santander Central Hispano (BSCH), “Financial Services and the Web: MIT Research Initiative,” \$800,000, (OSP 6891291).
July 2000 – May 2003	Center for eBusiness @MIT / Suruga Bank, “The Impact of the Internet on the Future of the Financial Services Industry,” \$450,000, (OSP 6891395).
July 2000 – May 2002	Center for eBusiness @MIT / Surugua Bank, “The Impact of the Internet on the Future of the Financial Services Industry,” \$300,000, (OSP 6890004).
May 2000 – Jan 2003	D&B and First Logic, “Total Data Quality Management (TDQM) Program: Corporate Householding Project”, \$125,000, (OSP 7773900).
January 2000 – June 2006	Singapore-MIT Alliance (SMA) Research Funding, “Collaborative Research,” \$650,000, (OSP 6891505).
July 1999 – Feb 2000	Citibank, “Citibank Research,” \$50,000, (OSP 6868200).
April 1999 – August 2002	Center for eBusiness @MIT / Fleet Bank, “Universal Financial Aggregator,” \$225,000, (OSP 6890007).
Jan 1999 – March 2004	Merrill Lynch, “Digital Factory,” \$500,000, (OSP 6856603).
Feb 1998 – Dec 2000	PricewaterhouseCoopers, “International Laboratory for Intelligent Information Integration,” \$550K, (OSP 6665400).
1998-1999	Air Force, Lean Sustainment Initiative.
1998-1999	PriceWaterhoseCoopers, “XML and Web Wrapping,” \$125,000.
1997-1999	Merrill Lynch, “Context Interchange and Web Wrapping: Application to Financial Research and Trading Systems,” \$140,000.
1996-1997	DLA, “Context Interchange: Application to Logistics,” \$800,000.
1995-1997	TRW, “COIN and InfoWeb,” Project with TRW, \$95,000..
1994-1998	Primark, “Context and Data Quality Issues in Financial Information Systems,” Project with TASC, \$105,000.
Sept 1992 – Dec 2017	Total Data Quality Management (TDQM) Program Consortium, \$457,885, (OSP 7773900).
1992-1998	DARPA, “Context Interchange: Using Knowledge about Data to Integrate Disparate Sources,” \$2,100,000.
1991	International Financial Services Research Center grant, “Semantic Reconciliation in Evolving Databases,” \$108,000..
Oct 1986 - Oct 1987	“Composite Information Systems,” Sponsors: MIT Center for Transportation Systems (CTS), U.S. Department of Transportation (DOT), U.S. Air Force (USAF), \$ 487,000 (OSP 98474).
Dec 1986 - June 1987	“Composite Information Systems,” Sponsors: Citibank, \$29,000 (OSP 98728). Principal Investigator.
Sept 1985 - Feb 1987	“INFOPLEX Database Computer Architecture,” Sponsor: Naval Electronic Systems Command (NAVELEX), \$128,517 (OSP 96965).
June 1983 - July 1984	“Systematic Approach to the Design of Complex Software Systems,”

Sponsor: National Aeronautics and Space Agency (NASA), \$38,104 (OSP 93763).

May 1983 - Feb 1985 "INFOPLEX Database Computer Architecture," Sponsor: Naval Electronic Systems Command (NAVELEX), \$164,116 (OSP 93754).

Sept 1981 - Aug 1983 "INFOPLEX Database Computer Architecture," Sponsor: Naval Electronic Systems Command (NAVELEX), \$269,139 (OSP 91445).

June 1980 - Feb 1982 "INFOPLEX Database Computer Architecture," Sponsor: Naval Electronic Systems Command (NAVELEX), \$164,152 (OSP 89928).

March 1980 - Dec 1981 "INFOPLEX Database Computer Architecture," Sponsor: Naval Electronic Systems Command (NAVELEX), \$25,982 (OSP 89137).

Jan 1980 - April 1981 "INFOPLEX Database Computer Architecture," Sponsor: Naval Electronic Systems Command (NAVELEX), \$68,056 (OSP 89136).

April 1979 - March 1980 "Systematic Approach to the Design of Complex Software Systems," Sponsor: Naval Electronic Systems Command (NAVELEX), \$37,899 (OSP 87769).

Jan 1979 - Dec 1979 "INFOPLEX Database Computer Architecture," Sponsor: Naval Electronic Systems Command (NAVELEX), \$28,675 (OSP 87606).

April 1978 - Dec 1986 "INFOPLEX Database Computer Architecture," Sponsor: National Science Foundation (NSF), \$122,451 (OSP 86482).

April 1978 - March 1979 "Systematic Approach to the Design of Complex Software Systems," Sponsor: Naval Electronic Systems Command (NAVELEX), \$66,617 (OSP 86505).

Jan 1978 - Dec 1978 "Tailored Information Systems," IBM/MIT Grant, \$12,000 (OSP Account 86150).

Oct 1977 - Dec 1978 "Use of Virtual Machines for the Development of Decision Support Systems," Air Force Rome Air Development Center (RADC), \$64,084 (OSP 85727).

April 1977 - March 1978 "Systematic Approach to the Design of Complex Software Systems," Naval Electronic Systems Command (NAVELEX), \$13,700 (OSP 85519).

July 1974 - Dec 1977 "Tailored Information Systems," IBM/MIT Grant, \$35,000.

July 1974 - Dec 1976 "Design of a Family of Operating Systems," Naval Electronic Systems Command (NAVELEX), \$386,371.

Jan 1973 - Dec 1973 "Sloan Information Systems Security Project," IBM Data Security Study, \$102,000.

TOTAL FUNDING: \$ 15,032,215

## 10. PUBLICATIONS

### SUMMARY

1. BOOKS AND MONOGRAPHS	7
2. BOOK CHAPTERS	16
3. JOURNAL ARTICLES	93
4. REFERRED CONFERENCE PROCEEDINGS	148
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7. VIDEO-TAPE AND SOFTWARE PUBLICATIONS	4
8. PATENTS ISSUED	3
9. UNPUBLISHED TEXTBOOKS	3
10. ARTICLES IN PROGRESS	5
TOTAL PUBLICATIONS	393

### 10.1 BOOKS AND MONOGRAPHS

1. ***Operating Systems*** (with J.J. Donovan), McGraw-Hill, 1974, 640 pp.  
(Adopted as textbook by over 100 colleges and universities).  
--Japanese edition, published by Nippon Computer Kyokai, 1976, 713 pp.  
--International Student Edition, published by McGraw-Hill Kogakusha, Ltd., 1978, 640 pp.  
--Russian edition, published by MNP, Moscow, USSR, 1978, 792 pp.  
--Czechoslovakian edition, published by SNTL Nakladatelstvi Technicke Literatury, 1981, 590 pp.  
--Polish edition, published by Panstwowe Wydawnictwo Nankowe, Warszawa, Poland, 1984, 625 pp.  
--Spanish edition scheduled for publication.  
--***Instructor's Manual to Accompany Operating Systems***, McGraw-Hill, 1974, 159 pp.
2. ***Software Projects: Pedagogical Aids for Software Education and Research*** (with J.J. Donovan), McGraw-Hill, 1977, 509 pp.
3. ***Computer Security: Problems and Solutions*** (with D.K. Hsiao and D.S. Kerr), ACM Monograph Series (Academic Press), 1979, 331 pp.  
-- Russian edition, published by MNP, Moscow, USSR, 1982, 264 pp.
4. ***The Strategic Use of Information Technology*** (Editor), Oxford University Press, 1987, 206 pages.
5. ***Software Project Dynamics: An Integrated Approach*** (with T.K. Abdel-Hamid), Prentice-Hall, 1991, ISBN 0-13-822040-9, 264 pp.  
-- Received the Jay Wright Forrester Award for "Best Contribution to the field of System Dynamics in the preceding five years" awarded by the System Dynamics Society, 1994.
6. ***Information Quality: Advances in Management Information Systems*** (AMIS) Series, (Editor, with R. Wang, E. Pierce, and C. Fisher), M. E. Sharpe Publisher, Armonk, NY, 2005, 265 pp.
7. ***Improving National and Homeland Security through Context Knowledge Representation & Reasoning Technologies***, (with N. Choucri and M. Siegel), *Emergent Information Technologies and Enabling Policies for Counter Terrorism*, IEEE Press/Wiley, 2006.

## 10.2 BOOK CHAPTERS

1. **"Structure and Capabilities of Key Personal Computer Operating Systems"** (with M. Hsu), *Insights into Personal Computers*, IEEE Press, 1985.
2. **"Perspectives on the Effective Use, Planning, and Impact of Information Technology,"** *The Strategic Use of Information Technology*, Oxford University Press, 1987 (pp. 3-14). [SWP # 1868-87]
3. **"Future Artificial Intelligence Requirements for Intelligent Database Systems"** (with M.L. Brodie, D. Bobrow, V. Lesser, D. Tsichritzis, and C. Hewitt), *Expert Database Systems* Benjamin/Cummings, 1989.
4. **"Chapter 2: Information Technology Platform for the 1990s"**, *The Corporation of the 1990's: Information Technology and Organizational Transformation*, Edited by Michael S. Scott Morton, Oxford University Press, 1990 (pp. 27-60). [SWP # 3061-89-MS]
5. **"Chapter 16: Putting IT All Together Before it Falls Apart"**, *Information Technology in Action: Trends and Perspectives*, Edited by Richard Y. Wang, Prentice-Hall, 1992.
6. **"Context Interchange Network Prototype"** (with A. Darawala, C. Goh, S. Hofmeister, and M. Siegel) in *Database Applications Semantics*, Chapman & hall (London, UK), October 1996 [SWP #3797, CISE #95-01].
7. **"The Elusive Silver Lining: How We Fail to Learn from Software Development Failures"** (with T.K. Abdel-Hamid), republished in *Modelling for Management 1: Simulation in Support of Systems Thinking*, (Dartmouth Publishing Company, Ltd; Hants, England), 1997, pp. 443-452.
8. **"Lessons Learned from Modeling the Dynamics of Software Development"** (with T.K. Abdel-Hamid), republished in *Software Project Management: Readings and Cases*, (Irwin Books/McGraw-Hill, Chicago), 1997, pp. 144-163.
9. **"Incorporating Generalized Quantifiers into Description Logic for Representing Data Source Contents"** (with S.Y. Tu), in *Data Mining and Reverse Engineering: Searching for Semantics*, Chapman & Hall, 1998 [SWP #3998, CISE #98-01].
10. **"Discovering and Reconciling Semantic Conflicts: A Data Mining Perspective"** (with H. Lu, W. Fan, C.H. Goh, D.W. Cheung), in *Data Mining and Reverse Engineering: Searching for Semantics*, Chapman & Hall, 1998 [SWP #3957, CISE #97-04].
11. **"Chapter 6: The MIT Context Interchange Project"** in *Data Quality*, Ed: R.Y. Wang, M. Ziad, and Y.W. Lee, Kluwer Academic Publishers, 2000, pp. 79-92 {earlier version appeared as "Metadata Jones and the Tower of Babel: The Challenge of Large-Scale Heterogeneity," in *Proceedings of the IEEE Meta-data Conference*, April 1999 [SWP #4069, CISE #99-04].
12. Hongwei Zhu and Stuart Madnick, **"Chapter 3: A Mediation Architecture for Global Comparison Services,"** in *Comparison-Shopping Services and Agent Designs* (ISBN: 978-1-59904-978-6), Edited by Yun Wan, Publisher: Information Science Reference, April 2009, pp. 37-55.
13. Nathan A. Minami and Stuart Madnick, **"Chapter 4: Using Systems Analysis to Improve Traffic Safety,"** in *Traffic Safety*, Christina Ferraro (Editor), Nova Science Publishers, Inc., 4th quarter, 2010.
14. Andreas Henschel, Erik Casagrande, Wei Lee Woon, Isam Janajreh, and Stuart Madnick, **"A Unified Approach for Taxonomy-based Technology Forecasting,"** chapter in *Business Intelligence Applications and the Web: Models, Systems and Technologies*, Editors: Marta E. Zorrilla, Jose-Norberto Mazón, Óscar Ferrández, Irene Garrigós, Florian Daniel and Juan Trujilloto, Business Science Reference (an imprint of IGI Global), dated 2012, pp. 178-197.

15. S. Madnick, R. Wang, K. Chettayar, F. Dravis, J. Funk, R. Katz-Haas, C. Lee, Y. Lee, X. Xian, S. Bhansali, "Part IV. Chapter 12: Exemplifying Business Opportunities for Improving Data Quality through Corporate Household Research," in *Information Quality*, (Editors: R. Wang, E. Pierce, S. Madnick, C. Fisher), M. E. Sharpe and National Defense Industry Press (of China), in Chinese, 2013, pp. 187-203.
16. Hongwei Zhu, Stuart Madnick, Yang Lee, and Richard Wang, "Chapter 16: Data and Information Quality Research: Its Evolution and Future," in *Computing Handbook, Third Edition: Information Systems and Information Technology, Volume 2*, Taylor & Francis Group, Chapman & Hall/CRC, May 2014, pp. 16:1-16:20.

### 10.3 JOURNAL ARTICLES

1. "String Processing Techniques", *Communications of the ACM*, Vol. 10, No. 7, July 1967, pp. 420-424 [<http://web.mit.edu/smadnick/www/papers/J001.pdf>].
2. "SCRIPT, An Online Manuscript Processing System" (with G.A. Moulton), *IEEE Transactions on Engineering Writing and Speech*, Vol. EWS-11, No. 2, August 1968, pp. 92-100 [<http://web.mit.edu/smadnick/www/papers/J002.pdf>].
3. "A Modular Approach to File System Design" (with J.W. Alsop), *IAG Quarterly*, IFIP Amsterdam, No. 3, 1969, pp. 7-34 [<http://web.mit.edu/smadnick/www/papers/J003.pdf>].
4. "Time-Sharing Systems: Virtual Machine Concept vs. Conventional Approach", *Modern Data Systems*, Vol. 2, No. 3, March 1969, pp. 34-36 [<http://web.mit.edu/smadnick/www/papers/J004.pdf>].
5. "Recent Technical Advances in the Computer Industry and Their Future Impact", *Sloan Management Review*, Vol. 14, No. 3, Spring 1973, pp. 67-84 [<http://web.mit.edu/smadnick/www/papers/J005.pdf>].
6. "The Future of Computers", *Technology Review*, Vol. 75, No. 8, August 1973, 13pp [<http://web.mit.edu/smadnick/www/papers/J006.pdf>].
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3. ***Knoware: How to Succeed in Computers Without Really Trying*** (with J.J. Donovan), published by Knoware Learning Systems, Inc., 1983, 3 diskettes for IBM PC and Apple-II computers (named "Best Product of the Month" by *Personal Software* magazine, March 1984).

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1. *Information Systems Technology* (with J.J. Donovan), 714 pp.
2. *Basic Systems Programming* (with J.J. Donovan), 495 pp.
3. *Information Processing Systems* (with J.J. Donovan), 260 pp.

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## 11. ORAL AND OTHER NON-PUBLISHED PRESENTATIONS

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“Web Mashups and Aggregators: Strategic, Legal, and Policy Issues Leading to Disruption of Existing Industries,” Sabanchi University (Istanbul, Turkey), March 29, 2012.

“Application of System Dynamics to Analyzing Challenges to Interoperable Systems and Impact of Budget Fluctuation on Complex Software Development,” Sabanchi University (Istanbul, Turkey), March 27, 2012.

“System Dynamics and Change Management,” Defense Intelligence Agency (DIA), Washington, DC, January 20, 2012.

“Understanding Organizational Traps in Implementing Service-Oriented Architecture,” JAIS Theory Development Workshop (associated with ICIS2011), Shanghai, China, December 3, 2011.

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