

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Stuart E MADNICK	POSITION TITLE: John Norris Maguire Professor of Information Technology, MIT Sloan School of Management & Professor of Engineering Systems, MIT School of Engineering		
Institutional affiliation MIT			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Massachusetts Institute of Technology	BS	6/1966	Electrical Engineering
Massachusetts Institute of Technology	MS	6/1969	Electrical Engineering
Massachusetts Institute of Technology	MBA	6/1969	Management
Massachusetts Institute of Technology	PhD	6/1972	Computer Science

A. Personal Statement

Key academic accomplishments and recognition: Served as the head of MIT's Information Technologies Group for more than twenty years, during which it was consistently rated #1 in the nation among information technology programs in all major reports (*U.S. News & World Reports*, *BusinessWeek*, and *ComputerWorld*). Faculty advisor on MIT's OpenCourseWare and MIT's Intellectual Property committees. Author or co-author of over 380 books, journal articles, or reports including the classic textbook, *Operating Systems*, and the book, *The Dynamics of Software Development*. Editor or Associate Editor of various journals, currently Editor-in-Chief of the *ACM Journal on Data and Information Quality* (JDIQ) and was founding Trustee and Vice President of the Very Large Data Base (VLDB) Foundation.

International Collaborations: Singapore-MIT Alliance (SMA); Malaysia University of Science and Technology (MUST); Sloan International Faculty Fellows (IFF) with Chinese universities of Tsingua (Beijing), Fudan (Shanghai), and Lingnan (Guangzhou); Masdar Institute of Science and Technology (Abu Dhabi.)

Industry and Entrepreneurship experience: Co-inventor on patents, such as "Querying Heterogeneous Data Sources over a Network Using Context Interchange" and "Data Extraction from World Wide Web Pages"; key designer and developer of projects such as IBM's VM/370 operating system and Lockheed's DIALOG information retrieval system; a consultant to major corporations, such as IBM, AT&T, and Citicorp; founder or co-founder of several high-tech firms, including Intercomp (acquired by Logicon), Mitrol (acquired by General Electric's Information Systems Company), Cambridge Institute for Information Systems (subsequently re-named Cambridge Technology Group), iAggregate (acquired by ArsDigita which was subsequently acquired by Red Hat), and currently operate a hotel in the 14th century Langley Castle in England.

B. Positions and Honors

1966-71 Systems Programmer & Consultant, IBM Cambridge Scientific Center, Cambridge, MA
 1967-69 Associate Engineer & Consultant, Lockheed Missiles and Space Company, Palo Alto Research Laboratory, Palo Alto, CA
 1968-70 Manager of Systems Development, International Computation, Inc. (INTERCOMP), Cambridge, MA
 1970-71 Principal Scientist, Honeywell Information Sciences Center, Cambridge, Massachusetts
 1971-72 Principal Engineer, Honeywell Advanced Systems and Technology Organization, Waltham, MA
 1972-present Assistant Professor, Associate Professor, Full Professor, Chaired Professor, MIT Sloan School of Management
 1972-75 Co-founder, Member of the Board and Technical Advisor, MITROL, Inc., Waltham, Massachusetts
 1978-85 Co-founder, Member of the Board, Advanced Information Systems & Services, Inc., Cambridge, MA
 1980-present Founder, Systems Engineering & Management Corp., Cambridge, MA
 1983-85 Co-founder and Vice-Chairman of the Board, Knoware, Inc., Cambridge, MA
 1985-present Co-founder and Director, HML, Ltd., Hexham, Northumberland, England
 1985-86 Co-founder, Member of the Board, Cambridge Institute for Information Systems, Inc., Cambridge, MA
 1998-2008 Member of the Board, Oxford Global Resources
 2000-01 Co-founder and Chairman of the Board, iAggregate Corporation, Cambridge, MA

2000-present Professor of Engineering Systems, MIT School of Engineering (joint appointment)
Visiting Professor or Scholar positions at: Harvard University, Nanyang Technological University (Singapore), University of Newcastle (England), Technion (Israel), Victoria University (New Zealand), University of Edinburgh (Scotland), Conservatoire National des Arts et Métiers (Paris, France), and the European Research Consortium for Informatics and Mathematics (Nice, France.)

C. Selected Peer-reviewed Publications

Complete list of 380 publications can be found at: <http://web.mit.edu/smadnick/www/Resume/Publications.htm>

Aykut Firat, Lynn Wu, and Stuart Madnick, "**General Strategy for Querying Web Sources in a Data Federation Environment**," *Journal of Database Management*, Vol. 20, No. 2, April-June 2009, pp 1-18.

Stuart Madnick, Richard Wang, Yang Lee, and Hongwei Zhu, "**Overview and Framework for Data and Information Quality Research**," *ACM Journal of Data and Information Quality*, Vol. 1, No. 1, Article 2, June 2009, pp. 2-1 to 2-22.

Hongwei Zhu and Stuart Madnick, "**Finding New Uses for Information: On the Web Innovative Reuses of Information Yields Opportunities – and Legal Questions**," *Sloan Management Review*, Vol. 50, No. 4, Summer 2009, pp. 18-21.

Hongwei Zhu and Stuart Madnick, "**One Size does not Fit All: Legal Protection for Non-Copyrightable Data**," *Communications of the ACM*, Vol. 52, No. 9, September 2009, pp. 123-128.

Wei Lee Woon and Stuart E. Madnick, "**Asymmetric Information Distances for Automated Taxonomy Construction**," *Knowledge and Information Systems*, Vol. 21, No. 1, October 2009, pp. 91 – 111.

Hongwei Zhu and Stuart Madnick, "**Reconciliation of Temporal Semantic Heterogeneity in Evolving Information Systems**," *La revue d'Ingénierie des Systèmes d'Information - Special Issue on Information System Evolution*, Vol. 14, No. 6/2009, November 2009, pp. 57-72.

Xitong Li, Yushun Fan, Stuart Madnick and Quan Z. Sheng, "**A Pattern-Based Approach to Protocol Mediation for Web Services Composition**," *Information and Software Technology*, Vol. 52, Issue 3, March 2010, pp. 304–323.

Hongwei Zhu and Stuart E. Madnick, "**Legal Challenges and Strategies for Comparison Shopping and Data Reuse**," *Journal of Electronic Commerce Research*, Vol 11, No 3, August 2010, Page 231-239.

Wei Lee Woon and Stuart Madnick, "**Semantic Distances for Technology Landscape Visualization**," *Journal of Intelligent Information Systems*, October 2011.

Stuart Madnick, Nazli Choucri, Xitong Li, Jeremy Ferwerda, "**Comparative Analysis of Cybersecurity Metrics to Develop New Hypotheses**," *Proceedings of the Workshop on Information Security & Privacy* (Jointly hosted by AIS SIGSEC and IFIP TC11.1), Shanghai, China, December 3-4, 2011.

D. Research Support: [PI] means Principal Investigator

2007-2011: [PI] Mubadala Development Company (Abu Dhabi), "Semantics-Enabled Technology Forecasting"

2010-2012: [PI] Lincoln Laboratory – Defense Intelligence Agency (DIA), "Understanding Challenges to Net-Centric Systems and Mitigating Approaches"

2010-2011: [PI] State Farm Insurance Company, "Identifying a Winning Information Aggregation Strategy"

2010-2011: [PI] Chevron Global Upstream, "Information Product Map (IPMAP) Methodology for Information Quality (IQ) Analysis"

2010-2012: [Senior researcher and member of 3 person Executive Committee] Office of Naval Research, "Explorations in Cyber International Relations" (large-scale collaboration among MIT Sloan School of Management, MIT Political Science, MIT Electrical Engineering & Computer Science, Harvard Law School, and Harvard Kennedy School of Government)

Contact information: Email: smadnick@mit.edu; Phone: +1-617-253-6671; Address: 100 Main Street, Room E62-422, Cambridge, MA 02142, USA

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Leonid A KALINICHENKO	POSITION TITLE Head of Laboratory for Compositional Information System Development at IPI RAN, Professor of the CMC MSU		
Institutional affiliation IPI RAN			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Kiev Polytechnical Institute	MS	6/1959	Radio Engineering
Institute of Cybernetics of the Ukrainian Academy of Sciences (Kiev)	PhD	6/1968	Computer Science
Moscow State University	Dr. of Sci.	7/1985	Computer Science
Russian Academy of Sciences	Professor	10/1990	Information Systems

A. Personal Statement

Key academic accomplishments and recognition: Author or co-author of over 200 books, journal articles, or conference papers including the book "Methods and Tools for Database Integration"; list of recent publications can be found at: <http://synthesis.ipi.ac.ru/synthesis/publications>. A member of editorial council of ComSIS Journal, of editorial board of "Systems and Means of Informatics" Journal. The Chair of the Moscow ACM SIGMOD Chapter, the Chair of the Steering Committee of the Russian Conferences on Digital Libraries.

International Collaborations: Participated in INTAS international research projects jointly with the colleagues from the French, German, Greek and Italian universities. Headed the UNESCO international development of a survey on digital libraries in education. A member of the Academic Board of the Genetic computing school (Singapore). The Chair of the Steering Committee of the East European Conferences "Advances in Databases and Information Systems" (ADBIS), a member of the IEEE-TCDL Executive Board, a member of TC5 IFIP WG on Enterprise Interoperability.

Industry and Entrepreneurship experience: Acted as a PI in projects for companies GTE and Siemens. Acted as a social entrepreneur founding the Moscow ACM SIGMOD Chapter and the annual East European Conference "Advances in Databases and Information Systems" (ADBIS).

B. Positions and Honors

1959 – 1969 Senior Researcher, Institute of Cybernetics Ukrainian Academy of Sci., Kiev
 1969 – 1985 Head of Department, Institute of Control Computers, Moscow
 1985 – *present* Head of Laboratory, Institute of Informatics Problems of RAS, Moscow
 1978 – *present* Associate/Full Professor of the Moscow State University
 1986 – USSR State prize laureate in science and technology
 2010 – Honoured Scientist of Russian Federation Award

C. Selected Peer-reviewed Publications

Kalinichenko L.A. **Methods and tools for equivalent data model mapping construction.** Advances in Database Technology: Proc. of the International Conference on Extending Database Technology EDBT'90. LNCS 416. -- Berlin-Heidelberg: Springer-Verlag, 1990. -- P. 92-119.

- Kalinichenko L.A. **Workflow reuse and semantic interoperability issues.** Proceedings of the NATO ASI "Advances in Workflow Management Systems and Interoperation", Istanbul, August 1997, Springer LNCS
- Kalinichenko L.A. **Compositional specification calculus for information systems development.** Proceedings of the 3rd East European Conference on "Advances in Databases and Information Systems", September 1999, Springer, LNCS N 1475
- Kalinichenko L.A., Martynov D.O., Stupnikov S.A. **Query rewriting using views in a typed mediator environment.** Proceedings of the East-European Conference on "Advances in Databases and Information Systems" (ADBIS'04), Hungary, Budapest, Springer, Lecture notes in Computer Science, Vol. 3255, September 2004
- Briukhov D.O., Kalinichenko L.A., Zakharov V.N. (IPI RAN), Panchuk V.E., Vitkovsky V.V., Zhelenkova O.P. (SAO RAN). **Information Infrastructure of the Russian Virtual Observatory (RVO)**, IPI RAN, SAO RAN, Moscow, 2005, 152 p.
- Kalinichenko L.A., Stupnikov S.A., Martynov D.O. **SYNTHESIS: a Language for Canonical Information Modeling and Mediator Definition for Problem Solving in Heterogeneous Information Resource Environments.** Moscow: IPI RAN, 2007. - 171 p.
- Kalinichenko L.A., Briukhov D.O., Martynov D.O., Skvortsov N.A., Stupnikov S.A. **Mediation Framework for Enterprise Information System Infrastructures.** Proc. of the 9th International Conference on Enterprise Information Systems ICEIS 2007. -- Funchal, 2007. -- Volume Databases and Information Systems Integration. -- P. 246--251.
- Briukhov D., Kalinichenko L., Martynov D., Skvortsov N., Stupnikov S., Vovchenko A., Zakharov V., Zhelenkova O. **Application driven mediation middleware of the Russian virtual observatory for scientific problem solving over multiple heterogeneous distributed information resources.** Scientific Information for Society – from Today to the Future: Proc. of the 21st CODATA Conference. ISBN 966-8993-86-0. - 2009. - P. 80-85.
- Kogalovsky M.R., Kalinichenko L.A.. **Conceptual and Ontological Modeling in Information Systems.** Programming and Computer Software, 2009, Vol. 35, No. 5, pp. 241–256. © Pleiades Publishing, Ltd., 2009.
- Kalinichenko L.A., Stupnikov S.A. **Synthesis of the Canonical Models for Database Integration Preserving Semantics of the Value Inventive Data Models.** -- Advances in Databases and Information Systems. -- Proc. of the 16th East-European Conference. – Poznan, Springer, LNCS 7503, 2012. -- P. 223 – 239.

D. Research Support [PI] means Principal Investigator

2008-2010: [PI] Russian Foundation for Basic Research, "Methods and tools for semantic identification of specifications of heterogeneous information resources relevant to a scientific problem and their integration in the specifications of the problem at the scientific information systems"

2009-2012: [PI] Presidium of RAS, "Subject mediator middleware providing for problem solving over a set of heterogeneous distributed information resources"

2011-2013: [PI] Russian Foundation for Basic Research, "Integration of rule-based declarative programs and knowledge, databases and services for scientific problems solving over heterogeneous distributed information resources"

2010-2012: [Investigator] Russian Foundation for Basic Research, "Definition of scientific subject domains conceptual models and problem solving support based on subject mediators in the hybrid grid-infrastructure"

2010-2012: [Investigator] Russian Foundation for Basic Research, "Developing of Grid-Infrastructure and Programming Environments for Resource-intensive Computational and Data Processing Problem Solving"

Contact information: Email: leonidk@synth.ipi.ac.ru; Phone: +7-499-129-2098; Address: IPI RAN, 44 bldg. 2 Vavilova st., Moscow, 119333, Russian Fed.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Hal Abelson		POSITION TITLE Professor of Electrical Engineering and Computer Science at MIT	
Institutional affiliation Massachusetts Institute of Technology (MIT)			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Princeton University	A.B.	1969	Mathematics
Massachusetts Institute of Technology	Ph. D	1973	Mathematics

NOTE: The Biographical Sketch may not exceed two pages. Follow the formats and instructions below.**A. Personal Statement:**

Abelson's professional career centers around the use of computation as a framework for formulating knowledge in science and engineering, both to create better tools for science and engineering and to better teach these subjects to people. He is a founding director of Creative Commons and of its Science Commons subsidiary, which promotes interoperability and data sharing in scientific research.

Abelson is a Fellow of the IEEE and winner of the 1995 Taylor L. Booth Education Award given by IEEE Computer Society, cited for his continued contributions to the pedagogy and teaching of introductory computer science. He plays a leading role in educational technology at MIT as co-director of the MIT-Microsoft iCampus Research Alliance in educational technology and as co-chair of the MIT Council on Educational Technology. He is also one of the prime initiators of the MIT OpenCourseWare project.

He is also engaged in the interaction of law, policy and technology as they related to societal tensions as sparked by the growth of the Internet. He initiated the MIT Computer Science Department's course on these topics, Ethics and Law on the Electronic Frontier, in 1994 and teaches it together with Daniel Weitzner.

B. Positions and Honors

1994-Present	MIT Class of 1922 Professor	MIT
1991-Present	Full Professor of Computer Science & Engineering	MIT
2008-2009	Visiting Faculty Member	Google
1982-1991	Associate Professor of Electrical Engineering and Computer Science	MIT
1979-1982	Associate Professor Dept. of EECS and Division for Study and Resources in Education	MIT
1977-1979	Associate Professor, Dept. of EECS and DSRE	MIT
1974-1979	Lecturer, Dept. of Mathematics and DSRE	MIT
1974-1979	Instructor, Dept. of Mathematics and DSRE	MIT
2011	ACM SIGCSE: Outstanding Contributions to Computer Science Education	
2003	Phi Beta Kappa: Visiting Scholar	
1995	IEEE Fellow	
1995	Taylor L. Booth Award	
1993	MIT EECS: Adler Scholar	
1992	MIT EECS: Junior Bose Teaching Award	

C. Selected Peer-reviewed Publications

1. "Information Accountability", with Daniel Weitzner, Tim Berners-Lee, Joan Feigenbaum, James Hendler and Gerald Jay Sussman, *Communication of the ACM*, 51, 6 (June 2008), pp. 82-87. DOI=<http://doi.acm.org/10.1145/13>.
2. "Transparent Accountable Data Mining: New Strategies for Privacy Protection", with T. Berners-Lee, C. Hanson, J. Hendler, L. Kagal, D. McGuinness, G.J. Sussman, K. Waterman and D. Weitzner, MIT CSAIL Technical Report, 2006-2007, January 2006.
3. "The Creation of OpenCourseWare at MIT", *J. Science Education and Technology*, May 2007.
4. "The Risks of Key Recovery, Key Escrow and Trusted Third-Party Encryption", with Ross Anderson, Steven Bellovin, Josh Benaloh, Matt Blaze, Whitfield Diffie, John Gilmore, Peter Neumann, Ronald Rivest, Jeffrey Schiller and Bruce Schneider, in *World Wide Web Journal*, vol. 2, no. 3, Summer 1997, O'Reilly & Associates, pp 241-257.
5. *Blown to Bits: Your Life Liberty and Happiness after the Digital Explosion*," with Harry Lewis and Kenneth Ledeen, Pearson Education, 2008.
6. "Structure and Interpretation of Computer Programs", Hal Abelson, Gerald Jay Sussman and Julie Sussman, MIT Press and McGraw-Hill, 1985, (published translations in French, Polish, Chinese, Japanese, Spanish, German and Korean) Second Edition, 1996.
7. "The Supercomputer Toolkit: A general framework for special-purpose computing", with A. Berlin, J. Katzenelson, W. McAllister, G. Rozas, G.J. Sussman and Jack Wisdom, *International Journal of High-Speed Electronics*, vol. 3, no. 3, 1992, pp. 337-361.
8. "Amorphous Computing", Harold Abelson, Don Allen, Daniel Coore, Chris Hanson, George Homsy, Thomas F. Knight Jr., Radhika Nagpal, Erik Rauch, Gerald Jay Sussman and Ron Weiss, in *Communications of the ACM*, 43, 5, (May 2000).
9. "Amorphous Computing" with Jacob Beal and Gerald Jay Sussman. *Encyclopedia of Complexity & System Science*, Springer, 2007 (to appear). Also available at: <http://hdl.handle.net/1721.1/37591>, CSAIL Tech Memo Reference 2007-030.

D. Research Support : [PI] Principle Investigator , [Co-PI] Collaborating Principle Investigator

2008-2012 [PI]: "Theory and Practice of Accountable Systems" (NSF)

Description: This project investigates computational and social properties of information networks necessary to provide reliable assessments of compliance with rules and policies governing the use of information.

2011-2013 [Co-PI]: "Propagator-Based Computing--A Programming Foundation for Decentralized Systems" (NSF)

2010-2012 [Co-PI]: "A Tool for Large-Scale Model-Centric Collective Decision-Making" (NSF)

2011-2012 [Co-PI]: "A System for Very Large-Scale Model-Based Group Problem-Solving" (NSF)

2012-2013 [PI]: "Toward Modeling New Social Norms in Two of the Biggest Social Networks in the World" (MITSI-China)

2007-2010 [PI]: "Policy Compliance of Queries in Private Information Retrieval" (IARPA)

Description: Development of policy assurance tools that check that queries made by the client conform to (access control/privacy) policies.

2007-2010 [PI]: "Accountable Information Usage in Fusion Center Information Sharing Environments" (DHS)

Description: Tools to enable machine-assisted analysis of relevant policies and mechanisms built into the information infrastructure that provide for accountable information flow.

Contact Information: Email:hal@mit.edu; Phone: +1.617.253.5856; Fax: +1.617.258.5999; Address: 32 Vassar Street, Room 32-386, Cambridge, MA 02139, USA

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Erik Brynjolfsson		POSITION TITLE Schussel Family Professor, MIT Sloan School; Director, MIT Center for Digital Business; Research Associate, Nat'l Bureau of Economic Research	
Institutional affiliation MIT			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Harvard University	A.B.	6/84	Applied Mathematics
Harvard University	S.M.	6/84	Decision Science
MIT Sloan School	Ph.D.	2/91	Managerial Economics

A. Personal Statement

Research areas: Economics of information and information technology, including big data, nano data and nowcasting; measurement of intangible assets and organizational capital; assessment of the value of digital information goods; productivity and performance measurement; pricing of information and information goods; bundling, aggregation and subscription for information goods; product variety and the long tail; analysis of email data, sociometric badge data and other fine grained data to understand social networks and information worker productivity; analysis of web search data, including google trends, to measure business, economic and social trends.

Teaching: Economics of Information; Effects of IT on organizations and markets; IT in manufacturing; Big Data; Managing in the Information Age;

Key academic accomplishments and recognition: Founder and Director of the MIT Center for Digital Business, the leading research center for research on the effects of the Internet and related technologies on business strategy, organization and performance. Chair of MIT Sloan Management Review, a leading Management Journal; Research Associate at the National Bureau of Economic Research; Marvin Bower Fellow, Harvard Business School. Visiting Associate Professor, Stanford Graduate School of Business. Academic Advisory Council, Federal Reserve Bank of Boston; Editor of the Information Systems Network of the Social Science Research Network; Chairman of the Workshop on Information Systems and Economics; Co-editor or Referee for numerous journals. One of the most cited researchers in the fields of information systems, economics, strategy, management and technology with over 22,000 citation on Google scholar (<http://scholar.google.com/citations?user=lqyGZpQAAAAJ&hl>). Author or coauthor of dozens of articles published in top academic journals. Author, Co-author or Co-Editor of 6 books. Winner of 10 Best Paper Awards for my research.

Industry and Entrepreneurship experience: Serve on Board of Directors of Computer Sciences Corporation (Ranked 155 on Fortune 500 list). Cofounder of three companies. Five U.S. Patents.

B. Positions and Honor

1986-1990	Research Assistant, MIT Sloan School, Cambridge, MA
1989-1990	Center for Telecommunications Management Dissertation Award
1985-1994	Instructor, Harvard University, Boston, MA
1990-1995	Assistant Professor, Douglas Drane Career Development Chair, MIT Sloan School, Cambridge, MA
1996-1998	Visiting Associate Professor, Stanford University, Stanford, CA
1995-2001	Associate Professor, MIT Sloan School, Cambridge, MA
1994	Best Paper Overall, International Conference on Information Systems
1994	Best Paper on the Conference Theme, International Conference on Information Systems
1996	Best Paper on the Conference Theme, International Conference on Information Systems
1997	Best Paper published in 1996, <i>Management Information Systems Quarterly</i>
1999	Best Paper published in Information Systems and Economics in previous five years, Workshop on Information systems and Economics (WISE).
2000	Best Paper in Field of Marketing Science in 1999, John D.C. Little Award

Principal Investigator or collaborator (Brynjolfsson, Erik):

2004-2005 Marvin Bower Fellow, Senior Research Fellow, Harvard Business School, Boston, MA
2006 Best Paper Overall, International Conference on Information Systems
2006 Best Paper on "Valuing IT Opportunities", International Conference on Information Systems
2005-2008 Director, CSK Corporation, Tokyo, Japan
2008 Best Paper on "Economics and Information Systems", International Conference on Information Systems
1999- present Affiliate Member, MIT Computer Science and AI Laboratory, Cambridge, MA
2001- present Professor of Management, MIT Sloan School, Cambridge, MA
2001- present Advisor, Academic Advisory Council, Federal Reserve Bank of Boston, Boston, MA
2002- present Director, Center for Digital Business at MIT, Cambridge, MA
2006- present Research Associate, National Bureau of Economic Research, Cambridge, MA
2010- present Chairman of the Board, *MIT Sloan Management Review*, Cambridge, MA
2010- present Advisor, iRobot Healthcare, Bedford, MA
2010-present Director, Computer Sciences Corporation, Falls Church, VA
2011 Distinguished Fellow of the INFORMS Information System Society

C. Selected Peer-reviewed Publications

1. Erik Brynjolfsson, Lorin Hitt, and Heekyung Kim, "Strength in Numbers: How does data-driven decision-making affect firm performance?" *Proceedings of the International Conference on Information Systems* Shanghai, 2011.
2. Aral, Sinan, Brynjolfsson, Erik and Wu, Lynn, "Three-Way Complementarities: Performance Pay, HR Analytics and Information Technology". *Management Science*, Forthcoming.
3. Aral, Sinan, Brynjolfsson, Erik and Van Alstyne, Marshall W., "Information, Technology and Information Worker Productivity" *Information Systems Research*, Forthcoming.
4. Tambe, Prasanna B., Hitt, Lorin M. and Brynjolfsson, Erik, (2012) "The Extroverted Firm: How External Information Practices Affect Innovation and Productivity" *Management Science*, pp. 1110-1446. (Jan, 2012).
5. Brynjolfsson, Erik, Hu, Yu Jeffrey and Simester, Duncan, (2011) "Goodbye Pareto Principle, Hello Long Tail: The Effect of Search Costs on the Concentration of Product Sales" *Management Science*, June, 2011.
6. Brynjolfsson, Erik and Hitt, Lorin (2003) Computing Productivity: Firm-level Evidence, *Review of Economics and Statistics*, Vol. 84, No. 4. November.
7. Brynjolfsson, E, L. Hitt and S. Yang, (2002) "Intangible Assets: Computers and Organizational Capital" *Brookings Papers on Economic Activity*, Brookings Institution.
8. Bresnahan, T, E. Brynjolfsson, and L. M. Hitt (2002). "Information Technology, Workplace Organization, and the Demand for Skilled Labor: Firm-Level Evidence," *Quarterly Journal of Economics*, 117(1),339-376.
9. Bakos, Y. and Brynjolfsson, E., (1999) "Bundling Information Goods: Pricing, Profits and Efficiency", *Management Science*, December.
10. Van Alstyne, M. and E. Brynjolfsson, "Widening Access and Narrowing Focus: Could the Internet Balkanize Science?" *Science*, 274, 1479-1480, (1996).

D. Research Support

"Management and organizational practices across the US", National Science Foundation, (Co-PI) 2010-2012

Principal Investigator, Center for Digital Business Focused Research "Social Networks and Information Worker Productivity"	2008-2009
Principal Investigator, Center for Digital Business Focused Research "Enterprise Information Technology"	2008-2009
Principal Investigator, Center for Digital Business Focused Research "How Do Top Performers Use IT?"	2008-2009
Principal Investigator, HP Labs Innovation Research Program	2008
Principal Investigator, Google Research Awards Program	2008

Contact information: Email: erikb@mit.edu; Phone: +1-617-253-4319; Address: 100 Main Street, Room E62-414, Cambridge, MA 02142, USA

BIOGRAPHICAL SKETCH			
Provide the following information for the Senior/key personnel and other significant contributors			
NAME Nazli Choucri		POSITION TITLE	
Institutional affiliation MIT		Professor of Political Science	
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
American University Cairo (AUC) Egypt Stanford University – USA Stanford University – USA	BA MA Ph.D.	June 1962 June 1964 June 1967	Social Science Political Science Political Science

NOTE: The Biographical Sketch may not exceed two pages. Follow the formats and instructions below.

A. Personal Statement

Briefly describe why your experience and qualifications make you particularly well-suited for your role (e.g., PI or collaborator) in the project that is the subject of the application.

I have worked in the areas of: (1) Analytical and computational foundations for CyberPolitics and International Relations (2) Quantitative analysis of sources and consequences of growth and development for welfare security and international behavior. (3) Global accord, environment, and sustainability, (4) Multi-method investigations of transformations in international relations. Principal Investigator, *Explorations in Cyber International Relations*, a collaboration of MIT and Harvard University, Minerva Program, US Government (2009-2014). (3) Experience with in the development of database for analysis of international relations by country since 1945-2011 (to be updated); (4) Design and management of collaborative research on knowledge provision and sharing across disciplines, languages, and cultures (including Arabic, Chinese, French); (5) Participated in the US Academy of Engineering study on Information and Environment 2001;

B. Positions and Honors

List in chronological order previous positions, concluding with the present position. List any honors. Include present membership on any Federal Government public advisory committee.

Assistant Professor, Queen's University Kingston Ontario Canada 1967-69

Assistant Professor MIT 1969-73

Associate Professor MIT 1973-1978

Professor MIT - 1978

- Elected Member of the European Academy of Sciences Principle Investigator, *Explorations in Cyber International Relations* 2009-
- Dr. Jean Mayer Global Citizenship Award, Tufts University Education for Public Inquiry and International Citizenship
- Working Group 3, UN-ICT, Preparations for World Summit on Information Technology 2001- 2005
- Panel Member, National Academy of Sciences Committee on Terrorism 2001-2002
- Panel Member, DARPA-National Academy of Sciences Committee on Understanding Terrorism in order to Deter Terrorism

C. Selected Peer-reviewed Publications

SkTech encourages applicants to limit the list of selected peer-reviewed publications or manuscripts in press to no more than 10. Do not include manuscripts submitted or in preparation. The individual may choose to include selected publications based on recency, importance to the field, and/or relevance to the proposed research.

BOOKS

Nazli Choucri, *CyberPolitics in International Relations*, Cambridge, MA: MIT Press (in press).

Nazli Choucri, Dinsha Mistree, Farnaz Haghseta, Toufic Mezher, Wallace R. Baker, and Carlos I. Ortiz, eds. 2007. *Mapping Sustainability: Knowledge e-Networking and the Value Chain*. New York: Springer. (author of several chapters)

Nazli Choucri, ed. 1993. *Global Accord: Environmental Challenges and International Responses*. Cambridge, MA: MIT Press. (author of several chapters)

Nazli Choucri, Robert C. North, and Susumu Yamakage. 1992. *The Challenge of Japan Before World War II and After: A Study of National Growth and Expansion*. London: Routledge.

Nazli Choucri, ed. 1984. *Multidisciplinary Perspectives on Population and Conflict*. Syracuse, N.Y.: Syracuse University Press. (author of select chapters)

Nazli Choucri. 1982. *Energy and Development in Latin America: Perspectives for Public Policy*. Lexington, MA: D.C. Heath/Lexington Books.

Nazli Choucri with David Scott Ross. 1981. *International Energy Futures: Petroleum Prices, Power, and Payments*. Cambridge, MA: MIT Press.

Nazli Choucri and Thomas Robinson, eds. 1978. *Forecasting in International Relations: Theory, Methods, Problems, Prospects*. San Francisco: W. H. Freeman. (author of several chapters)

Nazli Choucri. 1974. *Population Dynamics and International Violence: Propositions, Insights and Evidence*. Lexington, MA: D.C. Heath/Lexington Books.

Nazli Choucri with Vincent Ferraro. 1976. *The International Politics of Energy Interdependence*. Lexington, MA: D.C. Heath.

Nazli Choucri and Robert C. North. 1975. *Nations in Conflict: National Growth and International Violence*. San Francisco: W.H. Freeman & Co.

D. Research Support

List both selected ongoing and completed research projects for the past three years (Federal or non-Federally-supported). *Begin with the projects that are most relevant to the research proposed in the application*. Briefly indicate the overall goals of the projects and responsibilities of the key person identified on the Biographical Sketch. Do not include number of person months or direct costs.

Continued: Principal Investigator, MIT-Harvard Joint project on *Explorations in Cyber International Relations*. Goal is to develop an integrated field of cyberspace and international relations with theory, methods, tools, and data.

Completed: Principal Investigator, Project on *Energy and Technology in Abu Dhabi*, modeling activity focusing on transitions to renewable energy in an oil rich country.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME John D. E. Gabrieli, Ph.D.		POSITION TITLE Grover Hermann Professor of Health Sciences and Technology and Cognitive Neuroscience	
Institutional affiliation - MIT			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Yale University, New Haven, CT	B.A.	05/1978	English
MIT, Cambridge, MA	Ph.D.	06/1987	Behavioral Neuroscience
Harvard University, Cambridge, MA	Postdoctoral	1987-1989	Cognitive Neuropsychology

A. Personal Statement

I believe that I am well-suited for the role of a collaborator because my field of research is human brain imaging, which involves large data sets reporting information about brain structure and function across the life span, both in people with healthy brains and in people with brain disorders that affect millions of people, such as depression, anxiety, autism, ADHD, and dyslexia. There is great interest in making these data sets widely available and useful for understanding people and for promoting brain and mental health. The proposed SkData Center for Research, Entrepreneurship and Innovation Center (CREI) could support advances in such data Intensive research. I have worked for several years with the PI on developing some of the ideas in this important and exciting proposal.

B. Positions and Honors**Positions and Employment**

1987-1989 Postdoctoral Fellow and Lecturer (1988), Dept. of Psychology, Harvard University
 1988-1991 Assistant Professor, Dept. of Psychology, Northwestern University
 1989-2004 Research Associate, Memory Disorders Research Center, Boston VA Medical Center and Boston University School of Medicine
 1990- Lecturer, Visiting Assistant, Associate, and Professor (1993-date), Dept. of Neurological Sciences, Rush Medical College and Rush-Presbyterian-St. Luke's Medical Center
 1991-2005 Professor (2002-2005), Associate (1998-2002), and Assistant (1991-1998) Professor, Dept. of Psychology with appointments in Dept. of Radiology and Neurosciences Program, Stanford University
 2005- Grover Hermann Professor in Health Sciences and Technology and Cognitive Neuroscience, Harvard-MIT Division of Health Sciences and Technology (HST) and Department of Brain and Cognitive Neuroscience, MIT
 2005- Director, Martinos Imaging Center at the McGovern Institute, MIT
 2005- Co-Director, MIT Clinical Research Center
 2006- Member of the Faculty of Education, Harvard Graduate School of Education
 2011- Associate Researcher, Department of Psychiatry, Massachusetts General Hospital

Honors

1987 National Research Service Award, National Institute on Aging
 1996 American Psychological Association Division 40 Robert A. and Phyllis Levitt Early Career Award in Neuropsychology
 2001 DG Marquis Award for outstanding paper in *Behavioral Neuroscience*
 2008 Fellow, American Association for the Advancement of Science & Fellow, Association for Psychological Science, 2008

C. Selected Peer-reviewed Publications

1. Gabrieli, J.D.E., Brewer, J.B., Desmond, J.E., and Glover, G.H. (1997). Separate neural bases of two fundamental memory processes in the human medial temporal lobe. Science, 276, 264-266. PMID: 9092477
2. Brewer, J.B., Zhao, Z., Desmond, J.E., Glover, G.H., and Gabrieli, J.D.E. (1998) Making memories: Brain activity that predicts how well visual experience will be remembered. Science, 281, 1185-1187. PMID: 9712581
3. Sobel, N., Prabhakaran, V., Desmond, J.E., Glover, G.H., Goode, R.L., Sullivan, E.V., and Gabrieli, J.D.E. (1998) Sniffing and smelling: Separate subsystems in human olfactory cortex. Nature, 392, 282-286. PMID: 9521322
4. Sobel, N., Khan, R.M., Saltman, A., Sullivan, E.V., and Gabrieli, J.D.E. (1999) Olfaction: The world smells different to each nostril. Nature, 402, 35. PMID: 10573415
5. Canli, T., Sivers, H., Whitfield, S.L., Gotlib, I.H., and Gabrieli, J.D.E. (2002) Amygdala response to happy faces as a function of extraversion. Science, 296, 2191. PMID: 12077407
6. Anderson, M.C., Ochsner, K.N., Kuhl, B., Cooper, J., Robertson, E., Gabrieli, S.W., Glover, G.H., and Gabrieli, J.D.E. (2004) Neural systems underlying the suppression of unwanted memories. Science, 203, 232-235. PMID: 14716015
7. Ofen, N., Yun-Ching, K., Sokol-Hessner, P., Kim, H., Whitfield-Gabrieli, S., and Gabrieli, J.D.E. (2007) Development of the declarative memory system in the human brain. Nature Neuroscience, 10, 1198-120. PMID: 17676059
8. Hoefft, F., Meyler, A., Hernandez, A., Juel, C., Taylor-Hill, H., Martindale, J.L., McMillon, M., Kolchugina, G., Black, J.M., Deutsch, G.K., Siok, W.T., Reiss, A.L., Whitfield-Gabrieli, S., and Gabrieli, J.D.E. (2007) Functional and morphometric brain dissociation between dyslexia and reading ability. Proceedings of the National Academy of Sciences of the United States of America, 103, 1599-1604. PMID: 17360506
9. Gabrieli, J.D.E. (2009) Dyslexia: A new synergy between education and cognitive neuroscience. Science, 325, 280-283. PMID: 19608907
10. Perrachione, T.K., Del Tufo, S.N., and Gabrieli, J.D.E. (2011) Human voice recognition depends on language ability. Science, 333, 595. PMID: 21798942

D. Research Support (Partial List)

Ongoing Research Support

1. 1R01MH08344-02 (PI: Gabrieli) 7/1/2008 - 6/30/2013
NIH - Development of Declarative Memory in the Human Brain
The goal of this grant is to discover the neural underpinnings for the normal development of the declarative memory (conscious memory for events and facts).
2. OP-NI-0021-09 (PI: Gabrieli) 12/1/2007 – 11/30/2012
Ellison Medical Foundation - Cognitive Neuroscience of Autism and Dyslexia
The goal of this project is to advance methods in pediatric neuroimaging and to better understand the brain bases of dyslexia and autism.
3. 1R01HD067312-01 (PI: Gabrieli) 1/1/2011-12/31/2016
NIH - Using Cognitive Neuroscience to Predict Dyslexia Among Kindergarten Children
The goal of this research is to use brain measures to identify children at risk for dyslexia.
4. W81XWH-11-2-0179 (PI: Gabrieli) 8/1/2011 - 4/30/2013
DOD PT100120 - Using Real-Time Functional Imaging to Speed Recovery from TBI
The goal of this research is to use real-time fMRI to speed recovery from traumatic brain injury (TBI).
5. 1R01DC011339 (PI: Gabrieli) 8/1/2011 - 7/31/2016
NIH - Brain Bases of Language Deficits in SLI and ASD
The goal of this research is to study the brain basis of language difficulty in children with autism and specific language disorder.
6. 1R01NS073601-01 (PI: Chang; Subcontract PI: Gabrieli) 9/1/2011 - 8/31/2016
NIH via BIDMC- Cortical Connectivity, Physiology, and Response to Stimulation in Human Epilepsy
The goal of this research is to examine brain structure and function in a specific form of epilepsy.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Samuel Madden		POSITION TITLE PROFESSOR, COMPUTER SCIENCE, MIT	
Institutional affiliation			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
MIT	B.S.	6/99	EECS
MIT	M.ENG.	6/99	EECS
UC BERKELEY	PH.D.	12/03	CS

A. Personal Statement

Samuel Madden is a Professor of Electrical Engineering and Computer Science in MIT's Computer Science and Artificial Intelligence Laboratory. His research interests include databases, distributed computing, and networking. Research projects include the C-Store column-oriented database system, the CarTel mobile sensor network system, and the Relational Cloud "database-as-a-service". Madden is a leader in the emerging field of "Big Data", heading the Intel Science and Technology Center (ISTC) for Big Data, a multi-university collaboration on developing new tools for processing massive quantities of data. He also leads BigData@CSAIL, an industry-backed initiative to unite researchers at MIT and leaders from industry to investigate the issues related to systems and algorithms for data that is high rate, massive, or very complex.

B. Positions and HonorsPositions

MIT Professor	June 2012	Present
MIT Associate Professor	June 2007	June 2012
MIT Assistant Professor	Jan. 2004	June 2007
Intel Corporation, Senior Researcher	July 2003	Dec. 2003
UC Berkeley, Graduate Researcher	June 1999	July 2003

Awards

C. V. Ramamoorthy Distinguished Research Award, UC Berkeley	2003
Best Paper Award, VLDB Conference	2004
NSF Career Award	2005
Technology Review TR35 Top Innovator under the age of 35	2005
IBM Faculty Development Award	2006
Best Demo Award, SenSys conference	2006
Best Paper Award, MobiCom Conference	2006
Sloan Foundation Fellowship	2007
Best Paper Award, VLDB Conference	2007
Best Paper Award, Sensys Conference	2009
Best Demo Award, VLDB Conference	2011

C. Selected Peer-reviewed Publications

1. Madden, Samuel, Michael Franklin, Joseph Hellerstein, and Wei Hong, "TAG: a Tiny AGgregation Service for Ad-Hoc Sensor Networks," Proceedings of the ACM/IEEE Conference on Operating System Design and Implementation (OSDI), Boston, MA, 131-146, December, 2002.
2. Deshpande, Amol, Carlos Guestrin, Samuel Madden, Joseph Hellerstein, and Wei Hong, "Model Driven Data Acquisition in Sensor Networks," (Best Paper Award), Proceedings of the Conference on Very Large Databases (VLDB), Toronto, Canada, 588-599, August, 2004.
3. Stonebraker, Michael, Daniel Abadi, Adam Batkin, Xuedong Chen, Mitch Cherniack, Miguel Ferreira, Edmond Lau, Amerson Lin, Samuel Madden, Elizabeth O'Neil, Pat O'Neil, Alex Rasin, Nga Tran, and Stan Zdonik, "C-Store: A Column-oriented DBMS," Proceedings of the Conference on Very Large Databases (VLDB), Trondheim, Norway, 553-564, September, 2005.
4. Stonebraker, Michael, Samuel Madden, Daniel Abadi, Stavros Harizopoulos, Nabil Hachem, and Pat Helland. "The End of an Architectural Era (It's Time for a Complete Rewrite)," Proceedings of the Conference on Very Large Databases (VLDB), Vienna, Austria, 12 pages, September, 2007.
5. Abadi, Daniel, Adam Marcus, Samuel Madden, and Katherine Hollenbach. Scalable Semantic Web Data Management Using Vertical Partitioning. Proceedings of the Conference on Very Large Databases (VLDB), Vienna, Austria, 12 pages, September, 2007.
6. Pavlo, Andrew, Erik Paulson, Alexander Rasin, Daniel J. Abadi, David J. DeWitt, Samuel Madden, Michael Stonebraker. "A comparison of approaches to large-scale data analysis," In Proceedings of the ACM Conference on the Management of Data (SIGMOD), Providence, RI, 12 pages, 2009. Thiagarajan, Arvind, Lenin S. Ravindranath, Hari Balakrishnan, Samuel Madden, Lewis Girod. "Accurate, Low-Energy Trajectory Mapping for Mobile Devices." In Proceedings of the Conference on Network Systems Design and Implementation (NSDI), Boston, MA, 14 pages, 2011.
7. Curino, Carlo, Evan P. C. Jones, Raluca A. Popa, Nirmesh Malviya, Eugene Wu, Samuel Madden, Hari Balakrishnan, Nikolai Zeldovich. "Relational Cloud: a Database Service for the cloud." In Proceedings of the Conference on Innovative Database Research (CIDR), Asilomar, CA, 6 pages, 2011.
8. Grund, Martin, Jens Krüger, Hasso Plattner, Alexander Zeier, Philippe Cudré-Mauroux, Samuel Madden. "HYRISE - A Main Memory Hybrid Storage Engine," In Proceedings of the Conference on Very Large Databases (PVLDB), Seattle, WA, 10 pages, 2011.
9. Adam Seering, Philippe Cudre-Mauroux, Samuel Madden, and Michael Stonebraker. "Efficient Versioning for Scientific Array Databases." To Appear in Proceedings of the International Conference on Data Engineering (ICDE), Washington DC, 12 pages, 2012.

D. Research Support

Qatar Computing Research Institute: Collaboration to explore Data Tamer capabilities and algorithms. I am the project director.

NSF "ChunkyStore" CISE Grant – To develop next generation database storage technologies
NSF "CarTel" CPS Grant – To develop tools and techniques for sensor data collection in urban environments
NSF "Relational Cloud" CISE Grant – To develop "database as a service" technology

Quanta Computer – Developing relational "database as a service" technology.

Intel: science and technology center investigating aspects of "big data". I am the director.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Alex `Sandy` Pentland		POSITION TITLE Toshiba Professor of Media Arts and Sciences Engineering Systems Division	
Institutional affiliation MIT Media Laboratory and Engineering Systems Division			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
University of Michigan MIT	BGS PhD	1976 1982	Math, Computer Science Artificial Intelligence

NOTE: The Biographical Sketch may not exceed two pages. Follow the formats and instructions below.**A. Personal Statement**

Alex `Sandy` Pentland directs MIT's Human Dynamics Laboratory and the MIT Media Lab Entrepreneurship Program, and advises the World Economic Forum, Nissan Motor Corporation, and a variety of start-up firms. He has previously helped create and direct MIT's Media Laboratory, the Media Lab Asia laboratories at the Indian Institutes of Technology, and Strong Hospital's Center for Future Health. Sandy is among the most-cited computational scientists in the world, and a pioneer in connection science, computational social science, organizational engineering, mobile computing, image understanding, and modern biometrics. His research has been featured in Nature, Science, the World Economic Forum, and Harvard Business Review, as well as being the focus of TV features including Nova and Scientific American Frontiers. Sandy's research group and entrepreneurship program have spun off more than 30 companies to date.

B. Positions and HonorsSelected Professional Experience

1982-1987 Stanford University, Industrial Lecturer
 1987-Present Professor M.I.T., Media Lab, Sloan Management, Civil Eng., Eng. Systems.
 1995-2001 Academic Head, MIT Media Laboratory
 1998-2001 Founder, Director, Center for Future Health, University of Rochester,
 2000-2002 Founder, Director, Media Lab Asia, India
 2001-Present Founder, Director, Media Lab Entrepreneurship Program
 2011-Present Founder, Director, Center for Connection Science and Engineering, MIT

Selected Honors and Awards

1997 The Century Club (100 people to watch in the next century), Newsweek
 2000 Most Influential Paper of Decade Award, Intl. Asso. Pattern Recognition
 2003 Most Visionary Technology, MIT Enterprise Forum
 2007 Carlos Ghosn Award for Automotive Technology
 2008 TR10 Award: 10 Technologies That Will Change The World, Technology Review
 2008 Future of Health Technology Award, FHT Institute
 2009 Breakthrough Idea of the Year, Harvard Business Review
 2010 Winner, 40th Anniversary of the Internet Grand Challenge (DARPA `Red Balloons` Challenge)
 2011 Most Powerful Data Scientists In The World, Forbes

C. Selected Peer-reviewed Publications

IEEE Computer, January OUTLOOK issue, pp. 39-46 (2012) Pentland, A., 'Society's Nervous System: Building Effective Government, Energy, and Public Health Systems.'

Pervasive and Mobile Computing 7 (2011) 643-659 Aharony, Pan, Khayal, Moturu, Pentland, 'Social fMRI: Investigating and Shaping Social Mechanisms in the Real World.'

Science 28 October 2011: Vol. 334 no. 6055 pp. 509-512, (2011) Pickard, Pan,*, Rahwan, Cebrian, Crane, Madan, Pentland, 'Time-Critical Social Mobilization.'

American Scientist, Vol. 98, pp. 204-210 (2010) Pentland, A., 'To Signal Is Human.'

Science 29 October 2010: Vol. 330 no. 6004 pp. 686-688. Woolley, Chabris, Pentland, Hashmi, and Malone, 'Evidence for a Collective Intelligence Factor in the Performance of Human Groups.'

Proceedings of the National Academy of Sciences (PNAS) doi:10.1073_pnas.0900282106. (2009), Eagle, N., Pentland, A., and Lazer, D. 'Inferring Social Network Structure using Mobile Phone Data',

MIT Press, (2008), Pentland, A., 'Honest Signals: how they shape our world.'

D. Research Support

Things That Think 9/1/96 – continuing
Agency: Consortium of 46 Multinational Companies
Development of ubiquitous computing technology to enhance human health, learning and expression.
Role: co-Principal Investigator

Institute for Data Driven Design 9/1/2011
Consortium of Multinational Companies, in partnership with World Economic Forum
Development of secure distributed personal data stores and exchange networks
Role: Chief Scientist

Reality Analysis 9/1/2011 – continuing
DARPA (Defense Advanced Research Projects Agency)
Development of systems for continuous monitoring of mental health from behavior using cell phone sensors
Role: Principal Investigator

Smart Cities 9/1/2009 – continuing
MASDAR (Abu Dhabi)
Development of behavior monitoring and incentive mechanisms to promote energy efficient and healthy cities.
Role: Principal Investigator

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME MICHAEL STONEBRAKER	POSITION TITLE ADJUNCT PROFESSOR		
Institutional affiliation			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
PRINCETON UNIV UNIV OF MICHIGAN	BSEE PHD	6/65 6/71	ELECT. ENG'G COMP SCI

A. Personal Statement

Michael Stonebraker has been a pioneer of data base research and technology for more than a quarter of a century. He was the main architect of the INGRES relational DBMS, which (along with System R) proved the viability of the relational model. After that he developed the object-relational DBMS, POSTGRES, which was the first extensible DBMS with user defined types and functions. This capability has since been adopted by most DBMS vendors. After moving from Berkeley to M.I.T in 2000, he developed C-Store, which demonstrated that column stores were vastly superior to traditional row stores on data warehouse applications. As a result, most warehouse vendors are in the process of re-architecting their products from row stores to column stores. In addition, he has explored high performance main memory OLTP-style DBMSs. His H-Store system has pioneered a NewSQL movement to provide high performance ACID transactional DBMSs. Lastly, he was the main architect of SciDB, an engine for scientific DBMS and other applications requiring complex analytics. To ensure that his ideas quickly reach the marketplace, he has started several VC-backed companies to commercialize these technologies. Along the way, Stonebraker also worked on stream processing engines (Aurora), federated DBMSs (Mariposa and Distributed Ingres), scalable visualization engines (Data Splash and Visionary), and data integration systems (Morpheus and Data Tamer).

B. Positions and Honors

University of California, Berkeley – Asst. Professor 1971-1976, Assoc. Professor 1976-1982, Professor 1982-1994, Professor of the Graduate School 1994-1999.

Massachusetts Institute of Technology – Senior Lecturer 2000-2001, Adjunct Professor 2001-

Ingres Corporation – Founder and Chief Technology Officer: 1980-1992

Illustra Corporation – Founder and Chief Technology Officer: 1992-1996

Informix Corporation – Chief Technology Officer: 1996-2000

Cohera Corporation – Founder and Chief Technology Officer: 1997-2001

StreamBase Systems, Inc. – Founder and Chief Technology Officer: 2003 - 2007

Vertica Systems, Inc. – Founder and Chief Technology Officer: 2005-2010

Goby, Inc - Founder and Chief Technology Officer: 2008 – 2011

VoltDB, Inc. - Founder and Chief Technology Officer: 2009 –

Paradigm4, Inc – Founder and Chief Technology Officer: 2010 -

Principal Investigator or collaborator (Last, First, Middle):

Data Tamer Corp - Founder and Chief Technology: 2012 -
ACM Software System Award 1988
ACM SIGMOD Innovation Award 1992
ACM Fellow 1993
“Test of time” award (best paper 10 years later) SIGMOD 1997
National Academy of Engineering 1998
IEEE John Von Neumann medal 2005
American Academy of Arts and Science, 2010

C. Selected Peer-reviewed Publications

Michael Stonebraker, et. al., “Data Curation at Scale: The Data Tamer System,” Proc. 2013 CIDR Conference, Asilomar, Ca., Jan 2013 (to appear).

Gary Planthaber, Michael Stonebraker, James Frew, “EarthDB: Scalable Analysis of MODIS data using SciDB,” Proc. Big Spatial Workshop, Redondo Beach, Ca. Nov. 2012.

Michael Stonebraker, Paul Brown, Alex Poliakov, Suchi Raman, Adam Seering, “The Architecture of SciDB,” Proc. 2011 SSDBM, Portland, Ore. July 2011.

Michael Stonebraker, Rick Cattell, “10 Rules for Scalable Performance in ‘simple operation’ Datastores, CACM, June 2011.

Daniel Abadi, David DeWitt, Samuel Madden, Erik Paulson, Andy Pavlo, Alexander Rasin, Michael Stonebraker, Lakshмикant Shrinivas, “MapReduce and Parallel DBMSs: Friends or Foes?” CACM, Jan. 2010.

Stavros Harizopoulos, Daniel Abadi, Samuel Madden, Michael Stonebraker, “Through the OLTP Looking Glass, And What We Found There,” Proc. 2008 SIGMOD Conference, Vancouver, Canada, June 2008.

Michael Stonebraker, Samuel Madden, Daniel Abadi, Stavros Harizopoulos, Nabil Hachem, Pat Helland. “The End of an Architectural Era (It’s Time for a Complete Rewrite),” Proc. 2007 VLDB Conference, Vienna, Austria, Sept. 2007.

Michael Stonebraker et. al., “One Size Fits All? Part 2: Benchmarking Studies,” Proc 2007 CIDR Conference, Asilomar, Ca., Jan 2007.

Tiffany Dohzen, Mujde Pamuk, Seok-Won Seong, Joachim Hammer, Michael Stonebraker, “Data Integration Through Transform Reuse in the Morpheus Project,” Proc. 2006 SIGMOD Conference, Chicago, Il., June 2006.

D. Research Support

Qatar Computing Research Institute: Collaboration to explore Data Tamer capabilities and algorithms. I am the project director.

NSF: Infrastructure grant supporting the construction of SciDB. I am the principle investigstor

NSF: grant to support investigation of array data bases. I am a faculty investigator

Intel: science and technology center investigating aspects of “big data”. I am the co-director.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Roy E. WELSCH	POSITION TITLE: Eastman Kodak Leaders for Global Operations Professor of Management, MIT Sloan School of Management and Professor of Engineering Systems, MIT School of Engineering
Institutional affiliation MIT	

INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Princeton University	AB	06/65	Mathematics
Stanford University	MS	06/66	Mathematics
Stanford University	PhD	06/69	Mathematics

A. Personal Statement

Academic Accomplishments: Served as Head of the MIT Sloan Statistics Group for ten years and now am Head of the Management Science Area of the MIT Sloan School. Co-Author of the classic textbook: *Regression Diagnostics*. Author or co-author of over 100 papers and articles. Associate Editor: *Computational Statistics and Data Analysis* 2008-2010; *Journal of Computational and Statistical Graphics*, 1992; *SIAM Review*, 1979-1981; *Communications in Statistics, Series B: Simulation and Computation*, 1977-1979; *Journal of the American Statistical Association*, 1976-1979; *Annals of Statistics*, 1974-1977.

International Collaborations: Singapore-MIT Alliance in Computation and Systems Biology (2005-present); Sloan International Faculty Fellows with Chinese Universities (Tsinghua, Fudan, Lingnan); Masdar Institute of Science and Technology (Abu Dhabi).

Industry Experience: Member of the MIT Leaders for Global Operations (LGO) Operating Committee (1990-present). Supervised over 200 internships and theses in LGO partner companies each involving many plant visits. Extensive consulting experience in the areas of fraud detection, sampling, and statistical model building.

B. Positions and Honors

1965 Research Assistant, Division of Mathematics and Physics, Midwest Research Institute, Kansas City, Missouri
 1969 Assistant in Instruction, Mathematics Department, Stanford University
 1968 Research Assistant, Mathematics Department, Stanford University
 1968 Research Assistant, Mathematics Research Center, University of Wisconsin
 1969-present Assistant Professor, Associate Professor, Full Professor, Chaired Professor, MIT Sloan School of Management
 1973-1978 Senior Research Associate, Computer Research Center for Economics and Management Science, National Bureau of Economic Research
 1979-present Associate Director and Director, MIT Center for Computational Research in Economics and Management Science
 1981-1989 Director and Co-Director, MIT Statistics Center
 1988-1993 Leaders for Manufacturing Professor, MIT
 2005-present Professor of Engineering Systems, MIT
 2007-2011 Adjunct Professor, Nanyang Technological University, Singapore
 2009-present Eastman Kodak Leaders for Global Operations Professor of Management and Head of the Management Science Area of the Sloan School of Management

Honors: American Statistical Association (Fellow); Institute of Mathematical Statistics (Fellow); International Statistical Institute (Elected to Full Member); American Association for the Advancement of Science (Fellow)

C. Selected Peer-reviewed Publications

- D. Belsley, E. Kuh, and R. E. Welsch, **Regression Diagnostics: Identifying Influential Data and Sources of Collinearity**, John Wiley and Sons, Inc., New York, 1980. Paperback edition, 2005.
- W. S. Krasker and R. E. Welsch **Efficient Bounded-Influence Regression Estimation**, *Journal of the American Statistical Association*, 77, 1982, pp. 596-604.
- W. S. Krasker and R. E. Welsch, **Resistant Estimation for Simultaneous-Equations Models Using Weighted Instrument Variables**, *Econometrica*, 53, 1985, pp. 1475-1488.
- D. M. Gay and R. E. Welsch, **Maximum Likelihood and Quasi-Likelihood for Nonlinear Exponential Family Regression Models**. *Journal of the American Statistical Association*, 83, 1988, pp. 990-998.
- L. Wein, M. Longtin, and R. E. Welsch, **Sequential Screening in Semiconductor Manufacturing, II: Exploiting Spatial Dependence**, *Operations Research*, 44, 1996, pp. 173-195.
- G. Lauprete, A. Samarov, and R. E. Welsch, **Robust Portfolio Optimization**. *Metrika*, 55, 2002, pp. 139-149.
- L. McCann and R. E. Welsch, **Robust Variable Selection Using Least Angle Regression and Elemental Set Sampling**, *Computational Statistics and Data Analysis*, 52, 2007, pp. 249-257.
- R. Menjoge and R. E. Welsch, **A Diagnostic Method for Simultaneous Feature Selection and Outlier Identification in Linear Regression**, *Computational Statistics and Data Analysis*, 54, 2010, pp. 3181-3193.
- Tri-Dung Nguyen and R. E. Welsch, **Robust Regression Using Semi-Definite Programming**, *Computational Statistics and Data Analysis*, 54, 2010, pp. 3212-3226.
- Tri-Dung Nguyen and R. E. Welsch, **Outlier Detection and Robust Covariance Estimation Using Mathematical Programming**, *Advances in Data Analysis and Classification*, 4(4), 2010, pp. 301-334.
- A. Ng, J. C. Rajapakse, R. Welsch, P. Matsudaira, and J. Evans, **A Cell Profiling Framework for Modeling Drug Responses from HCS Imaging**, *Journal of Biomolecular Screening*, 15(7), 2010, pp. 858-868.
- R. Menjoge and R. E. Welsch, **Visualizing the Sampling Variability of Plots**, *Proceedings of COMPSTAT 2010*, 1375-1382, Springer.
- M. Veronika, R. Welsch, P. Matsudaira, J. Rajapakse, **Correlation of Cell Membrane Dynamics and Cell Motility**, *BMC Bioinformatics*, 12 (Suppl.13), S19, 2011.
- Naegle, K., Welsch, R., Yaffe, M., White, F., Lauffenburger, D., **MCAM: Multiple Clustering Analysis Methodology for Deriving Hypotheses and Insights From High-Throughput Proteomic Datasets**. *PLoS Computational Biology*, 2011

D. Research Support

- 2005-present [PI] Singapore-MIT Alliance-2 for research in computational and systems biology (feature selection in cancer gene microarrays and advanced computational image analysis).
- 2010-present [PI] from the Singapore Ministry of Education Research Fund and the Bioinformatics Research Center at NTU. Modeling and analysis of gene regulatory networks including delays.
- 2009-present [PI] d'Arbeloff Fund to develop a new foundation statistics course using bootstrap resampling and permutation testing methods.
- 2009 [PI] Masdar Institute for development of 15.062 Data Mining: Finding the Data and Models that Create Value

Contact Information: Email: rwelsch@mit.edu; Phone: +1-617-253-6601; Address: 100 Main Street, Room E62-564, Cambridge, MA 02139, USA.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME John R. Williams	POSITION TITLE: Professor of Information Engineering, MIT Civil and Environmental Engineering Department and MIT Engineering Systems Division		
Institutional affiliation MIT			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Oxford University, UK	MA	6/1971	Physics
U.C.L.A, California USA	MS	6/1973	Physics
U. of Wales, Swansea, UK	PhD	9/1977	Numerical Methods

A. Personal Statement

Research areas: Include large scale computation for prediction of complex system behavior, cyber-physical security, RFID track and trace for anti-counterfeiting, product authentication, big data analytics, geospatial data analysis for cyber security, agent based simulation, decision making and value of information, atomistic simulation of materials for petroleum industry.

Key academic accomplishments and recognition: Served as Co-Director with Profs. Crawley and Magnanti of the MIT System Design and Management (SDM) Program, 1999-2003 (MIT's first distance education program), Director of MIT Auto-ID Laboratory, 2006-present, Director of MIT Geospatial Data Center <http://geospatial.mit.edu> 2009-present. Led Product Development for the 21st Century initiative of SDM which included MIT, Rochester Institute of Technology, Detroit Mercy College and the Navy Postgraduate School.

Author or co-author of over 155 books, journal articles, or reports including the book, **RFID Technology and Applications** (9780521880930) and the book, **Numerical Modeling in Rock Mechanics**, John Wiley and Sons, 1990 He was recently named, alongside Bill Gates and Larry Ellison, as one of the 50 most powerful people in [Computer Networks](#). He serves on the Architectural Review Committee for the standards body GS1. Williams' analysis software system is licensed by Sandia National Laboratories and petroleum companies and his E-Education software was licensed by over 400 institutions in the US, Europe and Japan. Recent papers on the InkBoard collaboration software for the Tablet PC have won best paper prizes in conferences and generated press reports in US News and World Report, CNN, and the Boston Globe and his work on multi-core algorithms won best paper in HPC 2011 in Boston (see below).

International Collaborations: Malaysia University of Science and Technology (MUST); Masdar Institute of Science and Technology (Abu Dhabi.), U. of Wales, UK, Hong Kong University of Science and Technology, Hong Kong. Organized first Cyber-Physical Security Conference, 2011 in UK.

Industry and Entrepreneurship experience: Worked in industry for 10 years as Vice-President of Applied Mechanics Inc. a petroleum engineering consulting company. Co-inventor *on patent*, **A Method and Apparatus for Eliminating Artifacts in Data Processing and Compression Systems**, US Patent No. 5,852,681 and inventions: Discrete Element Software System MIMES, MIT Case. No. 7258S, (Licensed by Sandia National Laboratory), Discrete Element Software System XMAL, MIT Case No. 7257S (Licensed by Sandia National Laboratory). Consulted to companies such as Schlumberger, SAP Research, Microsoft Research, Digital Steam Inc., Kajima Corp., Rockwell Hanford, Sandia National Laboratories, Dept. Homeland Security National Infrastructure Simulation and Analysis Center, US Bureau of Mines, Motorola, Phillip Morris Inc., Ford Motor Company, Exxon Production Research, Mobil, Shell, Gulf Canada, and ARAMCO.

B. Positions and Honors (non MIT)

1968-71 Old Members Scholar, Lincoln College, Oxford University, UK
 1971-73 Research Associate, U.C.L.A. Physics Dept.
 1973-78 Research Assistant, then Senior Research Fellow, Swansea University, Wales

Principal Investigator or collaborator (Williams, John Richard):

1978-81 Managing Principal in Charge, Dames and Moore, Boston Office, USA
1981-89 Vice President, Applied Mechanics Inc, Lakewood, CO, USA
1989-90 Senior Lecturer, University of Wales, Swansea, UK
1990-97 Associate Professor (without tenure), MIT
1997-07 Associate Professor (with tenure), MIT
2007-12 Full Professor (with tenure), MIT

C. Selected Peer-reviewed Publications

Complete list of 190 publications can be supplied if requested

Williams, J., S. Herrero-Lopez, C. Leonardi, S. Chan, A. Sanchez, and Z. Aung, **Large in-memory cyber-physical security-related analytics via scalable coherent shared memory architectures**, in Proceedings of the IEEE Symposium on Computational Intelligence in Cyber Security, pp. 1-9, 2011.

Arenas-Martínez, M., S. Herrero-Lopez, A. Sanchez, J. Williams, P. Roth, P. Hofmann, and A. Zeier, **A comparative study of data storage and processing architectures for the smart grid**, in Proceedings of the First IEEE International Conference on Smart Grid Communications, pp. 285-290, 2010.

Aung, Z., J. Williams, A. Sanchez, M. Toukhy, and S. Herrero-Lopez, **Towards accurate load forecasting in smart power grids**, submitted to The 16th Pacific-Asia Conference on Knowledge Discovery and Data Mining, Kuala Lumpur, Malaysia, May 2012.

Faisal, M. A., Z. Aung, J. Williams, and A. Sanchez, **Securing advanced metering infrastructure using two-layered intrusion detection system**, to be submitted to The 11th International Conference on Developments in Power System Protection - Protecting the Smart Grid, Birmingham, UK, April 2012.

Li, D., Z. Aung, J. Williams, and A. Sanchez, **Efficient authentication scheme for data aggregation in smart grid with fault tolerance and fault diagnosis**, accepted for publication at 2012 IEEE Power and Energy Society Conference on Innovative Smart Grid Technologies, Washington D.C., USA, January 2012.

Li, D., Z. Aung, S. Sampalli, J. Williams, and A. Sanchez, **Privacy preservation for smart metering data via accountable group key scheme**, submitted to IEEE Transactions on Smart Grids, Special Issue on Computational Intelligence Applications in Smart Grids, 2011.

Williams, J., S. Herrero-Lopez, C. Leonardi, S. Chan, A. Sanchez, and Z. Aung, **Large in-memory cyber-physical security-related analytics via scalable coherent shared memory architectures**, in Proceedings of the IEEE Symposium on Computational Intelligence in Cyber Security, pp. 1-9, 2011.

Williams, J.R. and Amaratunga K., "A Discrete Wavelet Transform without Edge Effects Using Wavelet Extrapolation," The Journal of Fourier Analysis and Applications, Vol. 3, Number 4, 1997

Florian Michahelles, Frederic Thiesse, Albrecht Schmidt, and John R. Williams, **Pervasive RFID and Near Field Communication Technology**, IEEE Computer Society vol. 6, no. 3, 94-96, c3, Jul-Sept, 2007

Leonardi, C., Holmes, D.W., Williams, J.R., Tilke, P.G., **A Multi-Core Numerical Framework for Characterizing Flow in Oil Reservoirs**, Presented at the SCS Spring Simulation Multi-Conference – SpringSim 2011, April 4-7, 2011 – Boston, USA, **Awarded Best Paper in the 19th High Performance Computing Symposium and Best Overall Paper at SpringSim 2011**

D. Research Support: [PI] means Principal Investigator (sample projects only)

2009-2011: [PI] **Data Mining for Smart Grids**, \$400K Sponsor: Masdar Institute This research develops a simulator for the electrical smart grid to investigate future billing systems and also cyber security systems.

2011-2013 [PI] **Designing New Hydrofracturing Fluids Containing Particulates**, Shell Petroleum

2011-2012 **Center for Complex Engineering Systems - Integrated Energy Decision Support System**
Role: Co-PI with Prof. Crawley (President SkTech) Sponsor: CCES/ KACST Saudi Arabia

2012-2013 **Modeling Cyber Range for Cyber Security**, Sponsor Lincoln Labs, Boston

2012-2013 **Design and Implementation of Negative Authentication System**, US Intelligence Advanced Research Project Agency.

Contact information: Email: jrw@mit.edu; Phone: +1-617-253-7201; Address: 77 Massachusetts Av., Room 1-250, Cambridge, MA 02139, USA

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Alexander A Khoroshilov		POSITION TITLE Leading research scientist of Department of Information Technologies in Control at IPI RAN, Professor of Moscow Aviation Institute	
Institutional affiliation IPI RAN			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Kishinev Polytechnical Institute VINITI RAN (Moscow) IPI RAN	MS PhD Dr. of Sci.	6/1973 9/1987 3/2007	Engineering Information Science Information Science

A. Personal Statement

Key academic accomplishments and recognition: Author or co-author of over 60 books, journal articles, or conference papers including the book "Computer Linguistics and Information Technologies". Heads the team of text processing systems developers.

B. Positions and Honors

1979 – 1992 Senior Researcher, VINITI RAN (Moscow)

1992 – 2001 Head of Department, VINITI RAN (Moscow)

2002 – 2005 Head of Department, GNIVC, Federal Tax Service of Russia

2006- 2010 – Head of RETRANS Technologies Company

Since 2010 - Leading research scientist, IPI RAN

C. Selected Peer-reviewed Publications

1. *Khoroshilov A.A. Set-Phrase Machine Translation Based on Multilingual Dictionaries // Proceedings of ICAI'11, WORLDCOMP'11, July 18-21, 2011, Las Vegas, Nevada, USA. - CRSEA Press, USA, 2011.*
2. Belonogov, G. G., Khoroshilov, Alexander A., Khoroshilov, Alexei. A. *Phraseological Machine Translation of Texts from Natural Languages to Other Natural Languages. . Col : "Scientific-Technical Information", Series 2. - M.: VINITI, 2010, № 10.*
3. Belonogov, G. G., Khoroshilov, Alexander A., Khoroshilov, Alexei A. **Automatization of compiling of English-Russian bilingual phraseological dictionary using the corpora of bilingual texts. Col.: "Scientific Technical Information", Series 2. - M , VINITI, 2010, № 5.**
4. Belonogov, G. G., Gilyarevskij, R. S., Khoroshilov, A.A. **On the nature of information. Col.: "Scientific Technical Information", Series 2. - 2009. - № 1.**
5. Belonogov, G. G., Kalinin, Yu. P., Khoroshilov, Alexander A., Khoroshilov, Alexei A.. **Systems of Phraseological Machine Translation of Texts. Theoretical Preconditions and Experience in the Development. - M. 2007.**

Principal Investigator or collaborator (Khoroshilov, Alexander, Alexeevich):

6. Belonogov, G. G., Kalinin, Yu. P., Khoroshilov, A. A. **Computational linguistics and Advanced Information Technologies. Theory and Practice of Constructing of Automatic Text Processing Systems.** - M. 2004.
7. Belonogov, G. G., Bystrov, I. I., Kozachuk, M V., Novoselov, A. P., Khoroshilov A.A. **Automated Conceptual Text Analysis. Col. :” Scientific Technical Information”, Series 2.** - 2002. № 10.

D. Research Support[PI] means Principal Investigator

2012-2014:[Investigator] Russian Humanitarian Scientific Fund , “Vocabulary of terms in cybersecurity”, №12-34-10462.

Contact information: Email:khoroshilov@mail.ru; Phone: +7-485-760-3643; Address: IPI RAN, 44 bldg. 2 Vavilov st., Moscow, 119333, Russian Fed.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Oleg Yu. MALKOV	POSITION TITLE Head of Department of Physics of Stellar Systems at INASAN, Professor of the MSU Physics Faculty		
Institutional affiliation INASAN			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Moscow State University	B.Sc.	5/1982	Stellar Astronomy
Moscow State University	M.Sc.	1/1984	Stellar Astronomy
Pulkovo (Main) Astronomical Observatory	Ph.D.	6/1993	Astrophysics and Radioastronomy
Moscow State University	Dr. Sci.	5/2004	Astrophysics and Radioastronomy

A. Personal Statement

Key academic accomplishments and recognition: Author or co-author of over 170 journal articles or conference papers; list of publications can be found at: <http://www.inasan.ru/~malkov/pubs.html>. A member of the International Astronomical Union, European Astronomical Society, Euro-Asian Astronomical Society. Scientific Secretary of the National Committee of Russian Astronomers. A member of the Scientific Council on Astronomy RAS. A member of the CODATA Russian National Committee. A member of editorial board of Springer Series in Astrostatistics, the Co-Chair of the Steering Committee of the Russian Conferences on Modern Stellar Astronomy.

International Collaborations: Participated in INTAS international research projects jointly with the colleagues from the French and Italian universities. A member of International Virtual Observatory Alliance EC.

B. Positions and Honors

1984 – 1991 Probationer-researcher, Junior researcher, Institute of Astronomy of RAS, Moscow

1989 – 1990 Researcher, Observatoire de Strasbourg, France

1991 – 2005 Researcher, Senior researcher and Head of group, Institute of Astronomy of RAS, Moscow

2004 – 2005 Researcher, Universitat de Barcelona, Spain

2005 – *present* Leading researcher, Head of Department, Institute of Astronomy of RAS, Moscow

2005 – *present* Associate/Full Professor of the Moscow State University

C. Selected Peer-reviewed Publications

Malkov O.Yu., Sichevskij S.G., Kovaleva D.A. **Parameterization of single and binary stars** 2010, Mon. Not. R. Astron. Soc. **401**, 695-704.

Malkov O.Yu., Karpov S.V. **Cross-matching large photometric catalogs for parameterization of single and binary stars** 2011, in *ADASS XX Conference*, eds. Ian N. Evans, Alberto Accomazzi, Douglas J. Mink, Arnold H. Rots. Boston, Nov 2010, ASP Conf. Ser., Vol. **442**, 583-586.

Principal Investigator or collaborator (Malkov, OIrg, Yurievich):

- Malkov O.Yu., Sachkov M.E., Shustov B.M., Kaygorodov P.V., Yanez F.J., Gomez de Castro A.I. **Scientific program construction principles and time allocation scheme for the World Space Observatory --- Ultraviolet mission** 2011, *Astrophys. Space Science* **335**, 323-327.
- Malkov O.Yu., Mironov A.V., Sichevskij S.G. **Single-binary star separation by ultraviolet color index diagrams** 2011, *Astrophys. Space Science* **335**, 105-111.
- Karpov S.V., Malkov O.Yu., Mironov A.V. **Cross-identification of large surveys for finding interstellar extinction** 2012, *Astrophysical Bulletin* **67**, 82-89.
- Malkov O.Yu. **Cross survey matching with virtual observatory and parameterization of stars** 2012, in *Proceedings of the Conference of Young Scientists of CIS Countries '50 years of Cosmic Era: Real and Virtual Studies of the Sky'*, eds. Areg Mickaelian, Oleg Malkov and Nikolay Samus, Yerevan, Nov 2011, National Academy of Sciences of the Republic of Armenia, Yerevan, 48-55.
- Malkov O.Yu. **Eclipsing binaries: Observational data, classification and parameterization** 2012, in *Binaries Inside and Outside the Local Interstellar Bubble*, eds. J.A. Docobo, V.S. Tamazian, Yu.Yu. Balega, Santiago de Compostela, February 2011, AIP Conf. Proc., Vol. **1452**, 56-72.
- Kaygorodov P., Debray B., Kolesnikov N., Kovaleva D., Malkov O. **The new version of Binary star database (BDB)** 2012, *Baltic Astronomy* **21**, 309-318.
- Malkov O., Dluzhnevskaya O., Karpov S., Kilpio E., Kniazev A., Mironov A., Sichevskij S. **Cross catalogue matching with Virtual observatory and parameterization of stars** 2012, *Baltic Astronomy* **21**, 319-330.
- Malkov O., Tamazian V., Docobo J., Chulkov D., **Dynamical masses of a selected sample of orbital binaries** 2012, *Astron. Astrophys.* **546**, 69-73.

D. Research Support [PI] means Principal Investigator

2008-2010: [Investigator] Russian Foundation for Basic Research, "Investigation of the structure and dynamics of circumbinary envelopes of binary stars"

2009-2011: [Investigator] Russian Foundation for Basic Research, "Modeling the Galactic interstellar extinction distribution in three dimensions"

2010-2012: [PI] Russian Foundation for Basic Research, "Determination of fundamental stellar parameters, evolutionary state and star formation history of eclipsing binary systems"

2010-2012: [Investigator] Russian Foundation for Basic Research, "Definition of scientific subject domains conceptual models and problem solving support based on subject mediators in the hybrid grid-infrastructure"

2012-2014: [Investigator] Russian Foundation for Basic Research, "Developing of an integrated data warehouse on binary stars and methods of construction of similar warehouses of observational data in different disciplines"

Contact information: Email: malkov@inasan.ru; Phone: +7-495-951-7993; Address: INASAN, 48 Pyatnitskaya st., Moscow, 119017, Russian Fed.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Boris NOVIKOV		POSITION TITLE Professor, dept. of Computer Science, Mathematics and Mechanics faculty, Saint Petersburg state University, Saint-Petersburg, Russia	
Institutional affiliation Saint Petersburg state University			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Leningrad state university	MS	12/1972	Mathematics
Leningrad state university	PhD	02/1982	Computer Science
Saint Petersburg state University	Dr. of Sci	02/1994	Computer Science

A. Personal Statement

Graduated from the university as a mathematician, combined basic research activities with industrial applications during the whole career in the Operations Research lab. of the Saint Petersburg (Leningrad) university. During 25 years after the fall of iron curtain created and developed a research group in the area of databases and information management. Currently this group is one of few strongest Russian research groups and one of few groups producing internationally competitive research papers, published at high level international conferences. An author of 2 books and approximately 100 research papers published in journals and conference proceedings.

A winner of HP Open Innovation Award in 2008.

B. Positions and Honors

1972-1982 junior research associate, Operations Research lab., Leningrad state University
 1982-1992 senior research associate, Operations Research lab., Leningrad / Saint Petersburg state University
 1992-2000 managing director, Operations Research lab., Saint Petersburg state University
 2000-current professor, dept. of Computer Science, Saint Petersburg state University

C. Selected Peer-reviewed Publications

- M. Lukichev, B. Novikov, P. Mehra. **An xml-algebra for efficient set-at-a-time execution.** Comp. Sc. & Inf. Sys, 9(1):pp. 63-80, January 2012.
- E. Mikhaylova, B. Novikov, and A. Volokhov. **Similarity multidimensional indexing.** RCDL'2011.
- A. Yarygina, B. Novikov, N. Vassilieva. **Processing complex similarity queries: A systematic approach.** ABDIS 2011 Research Communications.
- B. Novikov, A. Pigul, A. Yarygina. **A performance analysis of semantic caching for distributed semi-structured query processing.** ADBIS 2010, Springer LNCS 6295.
- B. Novikov and E. Gorshkova. **Temporal Databases: From Theory to Applications.** Programming and Computer Software, 1(34), pp. 1-6, 2008
- B. Novikov and H. Dombrovskaya. **Database Application Tuning** (In Russian). BHV, St.-Petersburg, 2006. ISBN 5-94157-840-7.
- Lauri Pietarinen and Boris Novikov. **Enhancing Hierarchical Queries in Relational Databases with the Nested Set Representation.** Selected Papers from the Sixth International Baltic Conference DB&IS'2004, volume 118 of Frontiers in Artificial Intelligence and Applications, pages 65-77, 2005. IOS Press (Netherlands). ISBN 1-58603-485-5.

Principal Investigator or collaborator (Last, First, Middle):

Novikov and O. Proskurnin. **Towards collaborative video authoring**. Proc. of the ADBIS'2003, pp.370-384, Dresden, Germany, -Springer LNCS, 2003.

Novikov B.A. **Storage systems for data- and knowledge bases**. Programmirovaniye, 1993, N 2 (in Russian).

Novikov B.A. **Coroutines revisited**. Programmirovaniye, 1986, 4 (in Russian).

D. Research Support

The role is PI for all projects listed below.

Information management techniques for distributed semi-structured information resources (2010-2012, RFBR)

Semantic caching for semi-structured data model (2008-2011, HP Open Innovation Award)

Authorship Attribution Framework (2010-2011, Google research award)

Techniques for effective and efficient approximate stream retrieval and clustering (2011-2013, St. Petersburg university)

Theoretical foundations of distributed heterogeneous information resources management (2010-2014, St. Petersburg University)

Multi-Stream Topic Detection and Tracking (2010, collaboration with university of Lugano)

Contact information: e-mail: borisnov@acm.org, phone: +7 921 914 8534,

Address: Dept. of Comp Sci., Universitetsky prosp. 28, Saint Petersburg 198504 Russia

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Andreas RAUBER	POSITION TITLE Associate Professor, Vienna Univ. of Technology Head of IMP Lab & Key Research & Area Head Secure Business Austria Res. Center		
Institutional affiliation TUWIEN			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Vienna University of Technology Vienna, Austria	MS	01/1997	Computer Science (Neural Networks)
Vienna University of Technology Vienna, Austria	PhD	01/2001	Computer Science (Information Retrieval)
Vienna University of Technology Vienna, Austria	Habilitation	03/2004	Computer Science (Data Analysis & Visualization)

A. Personal Statement

The research work of Prof. Andreas Rauber covers the entire range of activities from data analysis and machine learning via application domains such as text and music mining to long-term preservation of digital information. Most recently, his research efforts have focused on ensuring the investments made into scientific research, specifically in the domain of data-driven research, are sustainable investments. This has led to specific activities both in the areas of benchmarking and evaluation in information retrieval settings, as well as ensuring the long-term availability and usability of research results for verification, re-use and integration. A key aspect in this work is the tight linkage between research data and the underlying processes involved in creating and transforming it.

Prof. Rauber has co-authored more than 200 articles in peer-reviewed journals, magazines, book chapters, and conference papers. He is president of the Austrian Association for Research in IT, and serves on the board of the Austrian Computer Society and on the board of the European Research Consortium for Informatics and Mathematics. He has been a principal investigator for numerous projects in both research as well as industrial / application-oriented settings.

B. Positions and Honors

- since 2009: Key Researcher and Area Head for Digital Preservation at the National Competence Center Secure Business Austria, Vienna, Austria.
- since 2004: Associate Professor, Head of Information Management and Preservation Lab, Department of Software Technology and Interactive Systems, Vienna University of Technology, Vienna, Austria
- 2003 - 2008: Head of iSpaces Group, Electronic Commerce Competence Center (EC3), Vienna, Austria
- 2002 - 2003: ERCIM Research Fellow, IMEDIA, Institut National de Recherche en Informatique, et en Automatique (INRIA), Rocquencourt, France
- 2001 - 2002: ERCIM Research Fellow, Istituto di Elaborazione dell'Informazione (IEI), Consiglio Nazionale delle Ricerche (CNR), Pisa, Italy
- 2010: Digital Preservation Award: Plato Preservation Planning Tool is shortlisted for the 2010 DP Award
- 2004: ISMIR Audio Contest: Winner ISMIR 2004 Audio Description Contest Award, Cat. "Rhythm Classification"
- 2002: ERCIM Cor Baayen Award: Recipient of the 2002 Cor Baayen Award of the European Research Consortium for Informatics and Mathematics

C. Selected Peer-reviewed Publications**Selected Journals 2008-2012**

- Mark Guttenbrunner, Andreas Rauber. A Measurement Framework for Evaluating Emulators for Digital Preservation To appear in: Transaction on Information Systems (TOIS), 30(2), 2012.

Principal Investigator or collaborator (Rauber, Andreas):

- Shariq Bashir, Andreas Rauber. On the Relationship between Query Characteristics and IR Functions Retrieval Bias. *Journal of the American Society for Information Science and Technology (JASIST)*, 62(8):1515-1532.
- Christoph Becker, Andreas Rauber. Decision Criteria in Digital Preservation: What to Measure and How. *Journal of the American Society for Information Science and Technology (JASIST)* 62(6):1009-1028, June 2011.
- Mark Guttenbrunner, Mihai Ghete, Annu John, Chrisanth Lederer, Andreas Rauber. Migrating Home Computer Audio Waveforms to Digital Objects: A Case Study on Digital Archeology. *International Journal on Digital Curation*, 6(1):79-98, 2011.
- Shariq Bashir, Andreas Rauber. Improving Retrievalability and Recall by Automatic Corpus Partitioning. In *Transactions on Large-Scale Data- and Knowledge Centered Systems*. 2:122-140. 2010.
- Steffen Schilke, Andreas Rauber. Long-term Archiving of Digital Data on Microfilm. In *International Journal of Electronic Governance*. 3(3):237-253, 2010.
- Mark Guttenbrunner, Christoph Becker, Andreas Rauber. Keeping the Game Alive: Evaluating Strategies for the Preservation of Console Video Games. In *International Journal of Digital Curation*, 5(1):64 - 90, 2010.
- Christoph Becker, Andreas Rauber. Improving Component Selection and Monitoring with Controlled Experimentation and Automated Measurements. In *Information and Software Technology*, 52(6):641 - 655, June 2010.
- Thomas Lidy, Carlos N. Silla Jr., Olmo Cornelis, Fabien Gouyon, Andreas Rauber, Celso A. A. Kaestner, Alessandro L. Koerich. Western vs. Ethnic Music: On the Suitability of State-of-the-art Music Retrieval Methods for Analyzing, Structuring and Accessing Ethnic Music Collections. In *Signal Processing Journal*, 90(4):1032 - 1048. April 2010, Elsevier.
- Christoph Becker, Hannes Kulovits, Mark Guttenbrunner, Stephan Strodl, Andreas Rauber, Hans Hofman. Systematic Planning for Digital Preservation. Evaluating Potential Strategies and Building Preservation Plans. In *International Journal on Digital Libraries*. 10(4):133 - 157, December 2009.
- Jakob Frank, Thomas Lidy, Ewald Peiszer, Ronald Genswaider and Andreas Rauber. Creating Ambient Music Spaces in Real and Virtual Worlds. In *Multimedia Tools and Applications*, 44:449 - 468 2009. Springer.
- Stephan Strodl and Andreas Rauber. Preservation planning in the OAIS model. In *New Technology of Library and Information Service*, 1:61 - 68, Beijing, China, 2008.
- Georg Pözlzbauer, Thomas Lidy and Andreas Rauber. Decision Manifolds - A supervised learning algorithm based on Self-Organization. In *IEEE Transactions on Neural Networks* 19(9):1518 - 1530, September 2008.
- Andreas Rauber. Data Quality for New Science: Process Curation, Curation Evaluation and Curation Capabilities In *Proceedings of Curating for Quality: Ensuring Data Quality to Enable New Science*, An invitational workshop sponsored by the National Science Foundation, p. 71-76, September 10-11, 2012, Arlington, VA USA

D. Research Support (post-2005, selected)

[PI] means Principal Investigator, specifying whether general PI, or PI for the respective institution in larger consortia

- 2013 - 2015: 4C: Collaboration to Clarify the Cost of Curation. EU FP7 Coordinating Action (CA), Principal Investigator for Secure Business Austria (SBA)
- 2011 - 2016: ELIAS: European Science Foundation: ESF Research Networking Program: Evaluating Information Access Systems, 09-RNP-085, Austrian Representative for the Steering Committee
- 2011 - 2014: SCAPE: EU FP7 Integrated Project: Scalable Preservation Environments, PI for TU Wien
- 2011 - 2014: Timbus: EU FP7 Integrated Project: Digital Preservation for Timeless Business Processes and Services, via affiliation with SecureBusiness Austria (SBA), PI for SBA
- 2011 - 2014: APARSEN: EU FP7 Network of Excellence: Alliance Permanent Access to the Records of Science in Europe Network, via affiliation with SecureBusiness Austria (SBA), PI for SBA
- 2010 - 2012: CHORUS+: EU FP7 Coordination and Support Action: Coordinated approach to the European effort on audio-visual Search engines, PI for TU Wien
- 2009 - 2011: DME: National Research Studio Digital Memory Engineering, PI for TU Wien
- 2009 - 2012: The Essence of Patent Retrieval, PI
- 2007 - 2010: IMPACT: Austrian Academic Exchange Service Project on Improving Music Genre Classification Performance by a Novel Approach of Combining Audio and Symbolic Music Descriptors, PI
- 2006 - 2010: PLANETS: EU FP6 Integrated Project (IP) Preservation and Long-term Access through Networked Services, PI for TU Wien
- 2006 - 2009: DPE: EU FP6 Coordination Action (CA) Digital Preservation Europe, PI for TU Wien

Contact information: Email: rauber@ifs.tuwien.ac.at; Phone: +43 1 58801 18826; Address: Favoritenstr. 9-11/188, A-1040 Vienna, Austria

BIOGRAPHICAL SKETCH

NAME Vladimir Serebryakov	POSITION TITLE The Head of Computer Science Department of the Computing Centre of the Russian Academy of Sciences (CCAS)		
Institutional affiliation CCAS			
INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Moscow State University	MS	1969	Mathematics
Computing Centre of the Russian Academy of Sciences (CCAS)	PhD	1976	Computer Science
Computing Centre of the Russian Academy of Sciences (CCAS)	Doctor of Science	1990	Computer Science
Computing Centre of the Russian Academy of Sciences (CCAS)	Professor	1999	Computer Science

A. Personal Statement

The main area of interest lies in the field of

- distributed information systems and digital libraries,
- Architecture development and implementation of digital library management systems in a distributed environment,
- development and implementation of mechanisms underlying the organization of the distributed environment of geospatial data (and pilot implementation for geodata),
- applications based on Semantic Web Technology, OWL-technology and domain ontologies.

Actively teaching, being a professor in the Department of Computational Mathematics and Cybernetics, Moscow State University and professor of the Faculty of Management and Applied Mathematics, MIPT.

B. Positions and Honors

Professor of the Moscow State University

Professor of the Moscow Institute of Physics and Technology

Member of the editorial board of the "Programmirovaniye" journal (Programming and Computer Software)

Member of the Expert Council of the Russian Foundation for Basic Research

Member of the Expert Council of the Higher Attestation Commission

The Head of Computer Science Department of the Computing Centre of the Russian Academy of Sciences (CCAS)

C. Selected Peer-reviewed Publications

V.Serebriakov . **Construction of Efficient Multi-Stage Compilers with the Attribute CWS.** Methods of Compilation and Program Construction, INRIA, Nice, 1988, 12 pp.

A. Bezdushny, V. Serebriakov. **SUPER: a Generator of Efficient Compilers.** Proc. of the Intern. Summer School, Prague, 1991, 25 pp.

A. Bezdushny, V. Serebriakov. **The use of the method for optimal code generation and common subexpression elimination.** 5th Soviet-French Symposium Grenoble, 1991, 27 pp

A. Bezdushny, V. Serebriakov. **The Use of the Parsing Method for Optimal Code Generation and Common Subexpression Elimination.** Technique et science informatiques, v. 12, n 1, 1993, pp 69-92.

A. Bezdushny, A. Bezdushny, A. Nesterenko, V. Serebriakov, T. Sysoev. **ISIR platform for Semantic Web integration and portal development.** // The 8th Multi-conference on Systemics, Cybernetics and Informatics, July 18-21 2004, Orlando, Florida, USA.

- V.Serebryakov et al. **Integrated System of Information Resources: Architecture, Implementation, Applications.** Computing Centre of the Russian Academy of Sci, Moscow, 2004, 241 pp.(In Russian)
- V.Serebryakov et al. **Integration of Metadata of the Integrated System of Information Resources.** Computing Centre of the Russian Academy of Sci, Moscow, 2006, 238 pp. (In Russian)
- V.Serebryakov et al. **Theory and Implementation of Programming Languages.** M3_Press, Moscow, 2006, 350 pp. (In Russian)
- V.Serebryakov, A. Zakharov. **LibMeta – the System for Digital Libraries Management.** Informatics and its Applications. Moscow, 2010, v.4, i. 4, pp 2-14. (In Russian)
- A.Koshkarev, A.Medvedev, V.Serebryakov. **Spatial Data Integration in the Distributed Academic Environment.** Lobachevsky readings, Kazan University, 2010. (In Russian)

D. Research Support: [PI] means Principal Investigator

2009 -2010 [PI] The development of the integration of distributed data center based on the OWL-technology and domain ontologies (and pilot implementation for geodata) (RFBR)

2011 -2013 [PI] Architecture development and implementation of digital library management systems in a distributed environment (RFBR)

2009-2011 [PI] Development of a data integration system with the use of semantic technologies (RAS)

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BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME VLADIMIR A SUKHOMLIN	POSITION TITLE Full Professor of the CMC MSU Head of Laboratory for Open Information Systems MSU		
Institutional affiliation IPI RAN			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Moscow Technical (Power) University	MS	7/1969	Computer engineering
Moscow State University	PhD	10/1976	Computer Science
Inst. of Pr. Mech. and Computer Engineer.	Dr. of Sci.	5/1990	Computer Science
Moscow State University	Professor	1/1992	Computer Science

A. Personal Statement

Author or co-author of over 100 books, journal articles, or conference papers including editor of the Proceedings of the International Scientific Conference "Modern information technology and IT-education.", 2005, 2006, 2008, 2009, 2010, 2011, 2012. Head of the Open Information Technologies laboratory in Faculty of Computational Mathematics and Cybernetics, Moscow State University, Director of Master's Programs, developer of State Educational Standards in IT field.

International Collaborations: Participated in INTAS international research projects jointly with the colleagues from the French, German, Greek and Italian universities.

Industry and Entrepreneurship experience: Acted as a PI in projects for companies Inst. of Pr. Mech. and Computer Engineer.

Founder, scientific director and organizer (as President of the Foundation League Internet Media" - Foundation for Promotion of Internet media, IT education, human development) of the International Scientific Conference "Modern information technology and IT-education."

B. Positions and Honors

1969 – 1979 System programmer, developer of control systems software, a Head of the Software Department at the Research Institute of Radio Industry, Moscow, USSR

1979 – 1998 A head of the department of System programming of the Scientific Research Computer Centre of MSU.

1998 – present Full time professor of the Computer Systems Department, Faculty of Computational Mathematics and Cybernetics, MSU and the Head of the Open Information Technologies laboratory, Faculty of Computational Mathematics and Cybernetics

C. Selected Peer-reviewed Publications

Sukhomlin VA International educational standards in the area of information technology. Applied Informatics. № 1 (37), 2012, January-February, p. 33-54.

Sukhomlin VA The reform of higher education: analysis of the results. Vest. Mosk.un-ta. Ser.Pedagogicheskoe education. 2011. Number 2, p. 29-48.

Principal Investigator or collaborator (Sukhomlin, Vladimir Aleksandrovich)

Sukhomlin VA, AP Afanasiev, LA Kalinichenko, MA Posypkin, SA Stupnikov, OV Sukhoroslov. "Training in the area of grid computing and distributed computing." Proceedings of the IV International Conference "Distributed Computing and Grid-technologies in Science and Education" JINR, Dubna, 2010, 6 pp.

Sukhomlin VA, I. Gor'kavyi. INFORMATION TECHNOLOGY BUILDING AUTOMATION tool complex manipulation of 3D laser scanning data. Informatics and its application. 2009. V.3. Issue 2. Pp. 53-64.

Sukhomlin V.A. and Bagenova I.U. Introduction to Programming (textbook). Internet University of Information Technologies - INTUIT.ru, BINOM. Laboratory of Knowledge, 2006, 328 p.

Sukhomlin VA IT education. Concept, educational standards, the standardization process. M.: "Hot Line - Telecom", 2005, 176 p.

D. Research Support [PI] means Principal Investigator

2010-2012: [PI] Russian Foundation for Basic Research, "Developing Grid-Infrastructure and Programming Environments for Resolution Complex Computational and Data Processing Problems".

2005-2006: [PI] Russian Foundation for Basic Research, "Wireless network technology for biology objects monitoring".

Contact information: Email: Vladimir.sukhomlin@gmail.com; Phone: +7-495-939-4626; Address: MSU Faculty of CMC, Lenin Hills, 1, Moscow, 119992, Russian Fed.

BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors

NAME Evgeny D. VYAZILOV	POSITION TITLE Head of Laboratory for National oceanographic data centre All Russian Institute of Hydrometeorological Information – World Data Centre (RIHMI-WDC), Professor of the IATE NRNU		
Institutional affiliation RIHMI-WDC			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	MM/YY	FIELD OF STUDY
Leningrad Hydrometeorological Institute	MS	06/1975	Oceanology Engineering
Shirshov Institute for Oceanology of the Academy of Sciences	PhD	02/1983	Oceanology
Shirshov Institute for Oceanology of the Academy of Sciences	Dr. of Sci.	03/1998	Oceanology

A. Personal Statement

Key academic accomplishments and recognition: Author or co-author of over 150 publications - journal articles, or conference papers including the books “Environmental Information Resources”, Architecture, methods and tools of Internet - technology. Extensible Markup Language: fields of applications.

International Collaborations: Participated in EC international research projects - Sea Search, Sea Data Net, Black Sea Scene jointly with the colleagues from the French, German, Greek and Italian, Netherland, Belgian and others European National oceanographic data centers - more 40 participants).

Industry and Entrepreneurship experience: The development of metadata base in field marine environment and marine activities; the data management in the International polar year (2007-2009); the development of decision support system for cases of natural phenomenon's; the creation of data bases in field oceanography.

B. Positions and Honors

1975 – 1981 Senior Researcher, RIHMI-WDC of Federal Service of Russia for Hydrometeorology and Environment Monitoring, Obninsk.

1983 – *present* Head of Laboratory, RIHMI-WDC, Obninsk.

2001 – *present* Associate Professor of the IATE NRNU MEPHI, Obninsk.

1998 – *present* Expert of Russian Fund for Basic Research, Ministry of Science and Education.

1999 – Award – Diploma of Russian Geographical Society “The outstanding scientific development in geography”.

2004 - Award – Diploma of Rushydromet “The Web portal ESIMO”.

2009 – Award – Chebyshev Regional Premium “The research of methods and tools of developments of Internet-technologies”.

2009 – Award – C-News Forum “ESIMO - the best project, nomination – innovations in IT-systems”.

C. Selected Peer-reviewed Publications

1. E.D. Vyazilov. Extensible Markup Language: fields of applications. - Germany. – Palmarium Academic Publishing. - 2012. – 492pp. ISBN 978-3-8473-9497-6.
2. E.D. Vyazilov. Architecture, methods and tools of Internet-technology. – Moscow. – URSS. 2009. – 512pp.
3. E.D. Vyazilov. Consolidation metadata in the field of environmental sciences // The Journal of Computational Technologies. 2005.Vol.10. Part 1. Special issues. - P.30-38.

Principal Investigator or collaborator (Vyazilov, Evgeny, Dnitrievich):

4. E.D. Vyazilov, N.N.Mikhailov. Integration of heterogeneous information resources in the field of marine activity and environmental: information, technological and organizational aspects // The Journal of Computational Technologies. 2005.Vol.10. Part 1. Special issues. - P.21-29.
5. E.D. Vyazilov. The data bases. – Obninsk. - IATE. - 2004. – 106 pp.
6. E.D. Vyazilov, N.N.Mikhailov. Russian Marine Expeditionary Investigations of the World Ocean. - Washington. Atlas Word Ocean N.51, 2002. – 184 pp.
7. E.D. Vyazilov. Environmental Information Resources. – 2001, Moscow. URSS. -310 pp.
8. V.A.Gelovani, A.A.Bashlykov, V.B.Britkov, E.D.Vyazilov. Intelligence decision support systems for dangerous situations. – 2001, Moscow. URSS. -304 pp.

D. Research Support [PI] means Principal Investigator

1999-2013: [PI] Federal Scientific-research Programme «The World ocean», subprogram 10 “Creation of Unified system of the information about World ocean”, <http://www.esimo.ru/>, <http://portal.esimo.ru>

2002-2004: [Investigator] EC, FP-6, “Sea Search”.

2006-2013: [Investigator] EC, FP-7, “Sea Data Net”, <http://www.seadatanet.org>

2005-2011 [Investigator] EC, FP-7, “Black Sea Scene”, <http://www.blackseascene.net>.

2011-2013: [Investigator] Russian Foundation for Basic Research, “Integration of rule-based declarative programs and knowledge, databases and services for scientific problems solving over heterogeneous distributed information resources”

2010-2012: [Investigator] Russian Foundation for Basic Research, 10-07-00352-a “Development of methods of information modeling for decision support in tasks integration and using information-analytical resources
Разработка методов информационного моделирования процессов поддержки принятия решений в задачах интеграции и использования информационно-аналитических ресурсов.

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