

## **Alexander Dekhtyar**

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## **Education**

### **Fall 1995 - Summer 2000 *Ph.D., Computer Science***

Department of Computer Science, University of Maryland at College Park.

### **Fall 1994 - Spring 1995 *Graduate program in Logic,***

Tver State University, Russia.

### **Fall 1992 - Spring 1993 *1 year non-degree exchange program***

American Collegiate Consortium, Department of Computer Science,  
University of Alabama.

### **Fall 1989 - Summer 1994 *5 year degree in Applied Mathematics and Computer Science,***

Applied Mathematics and Computer Science program, Tver State University, Russia

## **Experience**

### **September 2007 - present *Associate Professor,***

Department of Computer Science, California Polytechnic State University.

### **August 2000 - June 2007 *Assistant Professor,***

Department of Computer Science, University of Kentucky.

### **Fall 1996 - Summer 2000 *Research Assistant,***

Department of Computer Science, University of Maryland at College Park.

### **Summer 1997, Summer 1998, Summer 1999 *Instructor,***

Department of Computer Science, University of Maryland at College Park.

### **Fall 1995 - Spring 1996, Summer 1997 *Teaching Assistant,***

Department of Computer Science, University of Maryland at College Park.

### **Spring 1994 *High School Teacher of physics,***

Tver, Russia.

### **Fall 1991 - Summer 1992, Fall 1993 - Summer 1994 *Software Engineer,***

Computing Center, Tver State University, Russia.

## Research Interests

- ★ Uncertainty in Databases
- ★ Data Mining
- ★ XML
- ★ Logic Programming
- ★ Algorithms and Complexity theory
- ★ Traceability in Software Engineering
- ★ Uncertainty in AI
- ★ Information Retrieval
- ★ Digital Libraries
- ★ Computing in Humanities
- ★ Semistructured Databases

## Refereed Publications

### Publications in refereed journals

1. **Alex Dekhtyar**, Judy Goldsmith, Beth Goldstein, Krol Kevin Mathias, Cynthia Isenhour, (2009), Planning for Success: the Interdisciplinary Approach to Building Bayesian Models, *International Journal of Approximate Reasoning*, vol 50, No. 3, pp. 416-428.
2. **Alex Dekhtyar**, Michael I. Dekhtyar, (2009), The Theory of Interval Probabilistic Logic Programs, *Annals of Mathematics and Artificial Intelligence*, Vol. 55 (3-4), pp. 355-388.
3. Tim Menzies, **Alex Dekhtyar**, Justin Distefano, Jeremy Greenwald, (2007), Problems with Precision: A Response to “Comments on ‘Data Mining Static Code Attributes to Learn Defect Predictors’”, *IEEE Transactions of Software Engineering*, Vol. 33, No. 9, pp. 637-640, September, 2007.
4. Jane Huffman Hayes, **Alex Dekhtyar**, K.S. Sundaram, Ashlee Holbrook, Sravanthi Vadlamudi and Alain April, (2007), REquirements TRacing On target (RETRO): Improving Software Maintenance through Traceability Recovery, *Innovations in Systems and Software Engineering: A NASA Journal*, Vol. 3, No. 3, September 2007, pp. 193-202.
5. Jane Huffman Hayes, **Alex Dekhtyar** and K.S. Sundaram, (2006), Advancing Candidate Link Generation For Requirements Tracing: the Study of Methods, *IEEE Transactions of Software Engineering*, Vol. 32, No 1., pp. 4-19, January, 2006.
6. **Alex Dekhtyar**, Ionut E. Iacob, Jerzy W. Jaromczyk, Kevin Kiernan, Neil Moore and Dorothy Carr Porter, (2006) Support for XML Markup of Image-based Electronic Editions, *International Journal on Digital Libraries (IJDL)*, Vol. 6, No. 1, pp. 55-69, February, 2006.
7. Jane Huffman Hayes, **Alex Dekhtyar** and K.S. Sundaram, (2005), Improving After the Fact Tracing and Mapping to Support Software Quality Predictions, *IEEE Software*, Vol. 22, No. 6 (November/December), pp. 30-37. .
8. Suresh Yadla, Jane Huffman Hayes and **Alex Dekhtyar**, (2005), Tracing Requirements to Defect Reports, *Innovations in Systems and Software Engineering: A NASA Journal.*, Vol. 1, No. 2 (September 2005), pp. 116–124.
9. Jane Huffman Hayes and **Alex Dekhtyar**, (2005), A Framework for Comparing Tracing Experiments, *International Journal on Software Engineering and Knowledge Engineering (IJSEKE)*, Vol 15, No 5 (October 2005), pp. 751–782.
10. **Alex Dekhtyar** and Ionut E. Iacob, (2005), A Framework For Management of Concurrent XML Markup, *Data and Knowledge Engineering*, Vol. 52, No. 2, , pp. 185 - 215..

11. Wenzhong Zhao, **Alex Dekhtyar** and Judy Goldsmith, (2005), A Framework for Management of Semistructured Probabilistic Data, *Journal of Intelligent Information Systems*, Vol. 25, No. 3, pp. 293-332.
12. Kevin Kiernan, Jerzy W. Jaromczyk, **Alex Dekhtyar**, Dorothy Carr Porter, Kenneth Hawley, Sandeep Bodapati and Ionut E. Iacob, (2005), The ARCHway Project: Architecture for Research in Computing for Humanities through Research, Teaching and Learning, *Literary and Linguistic Computing*, Vol 20, Suppl 1, pp. 69–88.
13. Wenzhong Zhao, **Alex Dekhtyar** and Judy Goldsmith, (2004), Databases for Interval Probabilities, *International Journal on Intelligent Systems (IJIS)*, Volume 19, Issue 9, pp. 787-857 (September 2004).
14. **Alex Dekhtyar**, Judy Goldsmith and Janice Pearce, (2003), When Plans Distinguish Bayes Nets, *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems (IJUFKS)*, Vol. 11supp, November 2003, pp. 1–24; in *Electronic Transactions on Artificial Intelligence (ETAI)*.
15. **Alex Dekhtyar**, Robert Ross and V.S. Subrahmanian, (2001), Probabilistic Temporal Databases I: Algebra, *ACM Transactions on Database Systems*, Vol 26, 1, pp. 41–95.
16. **Alex Dekhtyar**, V.S. Subrahmanian, (2000), Hybrid Probabilistic Programs, *Journal of Logic Programming*, Volume 43, Issue 3, pp. 187 – 250.

### Refereed Publications in Conference/Workshop Proceedings

1. Jane Hayes, E. Ashlee Holbrook, **Alex Dekhtyar**, (2009), Methods for Automating Requirements Satisfaction Assessment, in *Proc., International Conference on Requirements Engineering (RE'2009)*, pp. 149–158, September 2009.
2. Jane Hayes, **Alex Dekhtyar**, David Janzen, (2009), Towards Traceable Test-Driven Development, in *Proc., Workshop on Traceability in Emerging Forms of Software Engineering (TEFSE'2009)*, May 2009.
3. **Alex Dekhtyar**, Michael I. Dekhtyar. On the semantics of disjunctive logic programs with interval probabilities, in *Proc. Russian National AI Conference*, Dubna, Russia, September 2008, pp. 240–248. *in Russian*.  
(**Alex Dekhtyar**, Michael I. Dekhtyar. O semantike diz'yunktivnyh logicheskikh programm s interval'nymi veroyatnostyami. Trudy XI Natsional'noj konferentsii po iskusstvennomu intellektu s mezhdunarodnym uchastiem, 28 Sept-3 Oct 2008, Dubna, Izdat. "LENAND", pp. 240-248)
4. Adam Dukovich, Jimmy Hua, Jong Seo Lee, Michael Huffman, **Alex Dekhtyar**, (2008), JOXM: Java Object—XML Mapping, *poster*, in *Proc. International Conference on Web Engineering (ICWE'08)*, July 2008.
5. **Alex Dekhtyar**, Jane Huffman Hayes, K.S. Sundaram, Ashlee Holbrook, Olga Dekhtyar, (2007), Technique Integration for Requirements Assessment, in *Proc. 15th IEEE International Conference on Requirements Engineering (RE-2007)*, October 2007, New Delhi, India.
6. **Alex Dekhtyar**, Jane Huffman Hayes, Jody Larsen, (2007), Make the Most of Your Time: How Should the Analyst Work with Automated Traceability Tools? *accepted*, *3d International Workshop on Predictive Modeling in Software Engineering (PROMISE'2007)*, May 20, 2007, Minneapolis, MN.

7. **Alex Dekhtyar**, Jane Huffman Hayes, Giuliano Antoniol, (2007), Benchmarks for Traceability? in *Proc., International Symposium on Grand Challenges in Traceability (GCT'07/TEFSE'07)*, March 2007, Lexington, KY.
8. Krol Kevin Mathias, Cynthia Isenhour, **Alex Dekhtyar**, Judy Goldsmith, and Beth Goldstein, (2006), When Domains Require Modeling Adaptations, *Proceedings, 4th Bayesian Modelling Applications Workshop at UAI'06*, July 2006, Boston, MA.
9. Ionut E. Iacob, **Alex Dekhtyar**, (2006), Multihierarchical XQuery for Document-Centric XML, *Proceedings, 3rd International Workshop on XQuery Implementation, Experience and Perspectives (XIME-P'06) at ACM SIGMOD'06*, June 2006, Chicago, IL.
10. **Alex Dekhtyar**, Krol Kevin Mathias, Praveen Gutti, (2006), Structured Queries for Semistructured Probabilistic Data, *Proceedings, 2nd Twente Data Management Workshop on Uncertainty in Databases (TDM'06)*, pp. 11-18, June 2006, Enschede, The Netherlands.
11. Ionut E. Iacob, **Alex Dekhtyar**, (2006), XML Views for Electronic Editions, *Proceedings, Joint Conference on Digital Libraries (JCDL'2006)*, pp. 139-140, June 2006, Chapel Hill, NC.
12. Ken McGill, Wes Deadrick, Jane Hayes, **Alex Dekhtyar**, (2006), Houston, We Have a Success Story: Technology Transfer at the NASA IV&V Facility, *Proceedings, International Workshop on Technology Transfer in Software Engineering (WOTTSE'2006) at ICSE'06*, Shanghai, China, May 2006.
13. Jane Huffman Hayes, **Alex Dekhtyar**, Ashlee Holbrook, Olga Dekhtyar and K.S. Sundaram, (2006), Will Johnny/Joanie Make a Good Software Engineer? Are Course Grades Showing the Whole Picture?, *Proceedings, 19th Conference on Software Engineering Education and Training (CSEET)*, Hawaii, April 2006.
14. Ionut E. Iacob, **Alex Dekhtyar** and Michael I. Dekhtyar, (2006), On Potential Validity of Document-Centric XML Documents, *Proceedings, International Workshop on XML Schema and Data Management (XSDM) at ICDE'06*, April 2006, Atlanta, Georgia.
15. Qing Cui and **Alex Dekhtyar**, (2005), On Improving Local Website Search Using Weblogs: A Preliminary Report, *Proceedings, Workshop on Web Information Management (WIDM) at ACM CIKM'05*, pp. 59–66 November 2005, Bremen, Germany.
16. Jane Huffman Hayes, **Alex Dekhtyar**, (2005), Humans in the Traceability Loop: Can't Live With'Em, Can't Live Without'Em, in *Proceedings, 3d ACM International Workshop on Traceability in Emerging Forms of Software Engineering (TEFSE'2005)*, pp. 20–23, November 2005, Long Beach, CA.
17. **Alex Dekhtyar** and Michael I. Dekhtyar, (2005), Revisiting the Semantics of Interval Probabilistic Logic Programs, in *Proceedings, Eighth International Conference on Logic Programming and Non-Monotonic Reasoning, LPNMR'05*, LNAI, Vol. 3662, pp. 330-342, September 2005, Diamante, Italy.
18. **Alex Dekhtyar**, Ionut E. Iacob and Srikanth Methuku, (2005), Searching Multi-Hierarchical XML Documents: the Case of Fragmentation, *16th International Conference on Database and Expert Systems Applications, DEXA'05*, LNCS, Vol. 3588, pp. 576-585, August 2005, Copenhagen, Denmark.
19. Derek Williams, Kyle Bailey, **Alex Dekhtyar**, Judy Goldsmith, Beth Goldstein, Raphael Finkel and Joan Mazur, (2005), Interactive preferences and decision-theoretic planning, *Proceedings, Multidisciplinary Workshop on Advances in Preference Handling at IJCAI'05*, pp. 192 – 203 July 2005, Edinburgh, UK.

20. Ionut E. Iacob and **Alex Dekhtyar**, (2005), Towards a Query Language for Multihierarchical XML: Revisiting XPath, in *Proceedings, International Workshop on the Web and Databases, (WebDB'05) at ACM SIGMOD'05*, pp. 43–48, June 2005, Baltimore, MD.
21. Ionut E. Iacob and **Alex Dekhtyar**, (2005), xTagger: a New Approach to Authoring Document-centric XML, (2005), in *Proc. 5th Joint Conference on Digital Libraries (JCDL'05)*, pp. 42-43.
22. Ionut E. Iacob and **Alex Dekhtyar**, (2005), Concurrent Markup Hierarchies: a Computer Science Approach, in *Proceedings, International ACH-ALLC-2005 Conference*, pp 86-88, June 2005, Victoria, Canada.
23. Ionut E. Iacob and **Alex Dekhtyar**, (2005), Building Tools for Image-Based Electronic Editions, session paper, part of Kevin Kiernan, Dorothy Carr Porter, **Alex Dekhtyar**, Ionut E. Iacob, Jerzy W. Jaromczyk and Neil Moore, The Edition Production Technology (EPT) and the ARCHway and Electronic Boethius Projects, session, in *Proceedings, International ACH-ALLC-2005 Conference*, pp. 107-113, June 2005, Victoria, Canada.
24. Jane Huffman Hayes, **Alex Dekhtyar** and K.S. Sundaram, (2005), Text Mining for Software Engineering: How Analyst Feedback Impacts Final Results, in *Proceedings MSR'2005: Second International Workshop on Mining Software Repositories at ICSE'05*, pp. 58-62, May 2005, St. Louis, MO.
25. Jane Huffman Hayes, **Alex Dekhtyar** and K.S. Sundaram, (2005), Baselines in Requirements Tracing, (2005), in *Proceedings, PROMISE'2005: International Workshop on Predictor Models in Software Engineering at ICSE'05*, May 2005, St. Louis, MO.
26. Ionut E. Iacob, **Alex Dekhtyar** and Kazuyo Kaneko, (2004), Parsing Concurrent XML, in *Proceedings, Workshop on Web Information Management (WIDM'04) at ACM CIKM'04*, pp. 23–30, November 2004, Washington DC.
27. Ionut E. Iacob, **Alex Dekhtyar** and Michael I. Dekhtyar, (2004), Checking Potential Validity of XML Documents, in *Proceedings, 7th International Workshop on the Web and Databases (WebDB-2004) at ACM SIGMOD'04*, pp. 91 - 96.
28. **Alex Dekhtyar** and Michael I. Dekhtyar, (2004), Possible Worlds Semantics for Probabilistic Logic Programs, in *Proceedings, International Conference on Logic Programming (ICLP'2004)*, pp. 137–148, St. Malo, France, September 2004.
29. **Alex Dekhtyar** and Michael I. Dekhtyar, (2004), On Semantics of Simple Logic Programs with Interval Probabilities, (2004), (In Russian), in *Proceedings, 9th National Conference on Artificial Intelligence (KII-2004)*, Vol. 1, pp. 254 - 262, Fizmatlit, October 2004, Tver, Russia.
30. Jane Huffman Hayes, **Alex Dekhtyar**, K.S. Sundaram and Sarah Howard, (2004), Helping Analysts Trace Requirements: An Objective Look, in *Proceedings, International Requirements Engineering Conference (RE'2004)*, pp. 249-261, September 2004, Kyoto, Japan.
31. **Alex Dekhtyar**, Ionut E. Iacob, J.W. Jaromczyk, Neil Moore and Dorothy Carr Porter, (2004), Database Support for Image-based Electronic Editions, in *Proceedings, Workshop on Multimedia Information Systems (MIS'2004)*, August 2004, College Park, MD.
32. **Alex Dekhtyar**, Jane Huffman Hayes and Tim Menzies, (2004), Text is Software, Too, in *Proceedings, MSR 2004: International Workshop on Mining Software Repositories at ICSE'04*, pp. 22-26, May 2004, Edinburgh, Scotland.

33. Ionut E. Iacob and **Alex Dekhtyar**, (2003), A Framework for Management of Concurrent XML Markup, in *Proceedings, 1st Workshop on XML Data and Schemas (XSDM'2003)*, in *M.J. Jeusfeld, O. Pastor (Eds.), Proc. Conceptual Modeling for Novel Application Domains*, LNCS, Vol. 2814, pp. 311–322, October 2003, Chicago, IL.
34. Wenzhong Zhao, **Alex Dekhtyar** and Judy Goldsmith, (2003), Query Algebra Operations for Interval Probabilities, (2003), in *Proceedings, Intl. Conference on Database and Expert Systems Applications (DEXA 2003)*, pp. 527–536, August 2003, Prague, Czech Republic.
35. Jane Huffman Hayes, **Alex Dekhtyar** and James Osborne, (2003), Improving Requirements Tracing via Information Retrieval, in *Proceedings, Intl. Requirements Engineering Conference (RE'2003)*, pp.151–161, September 2003, Monterey, CA.
36. Judy Goldsmith, **Alex Dekhtyar** and Wenzhong Zhao, (2003), Can Probabilistic Databases Help Elect Qualified Officials?, in *Proceedings, 2003 Florida Atlantic AI Symposium (FLAIRS'2003)*, pp. 501–505, May 2003, St. Augustine, FL.
37. **Alex Dekhtyar** and Ionut E. Iacob, (2003), Management of Data For Building Electronic Editions of Historic Manuscripts, session paper in *Proceedings, International ACH-ALLC-2003 Conference*, pp. 11–13, May 2003, Athens, GA.
38. James Royalty, Robert Holland, Judy Goldsmith and **Alex Dekhtyar**, (2002), POET: The On-line Preference Elicitation Tool, in *Proceedings, AAAI Workshop on Preferences in AI and CP: Symbolic Approaches*, pp. 80-86, August, 2002, Edmonton, Canada.
39. **Alex Dekhtyar** and Judy Goldsmith, (2002), Conditionalization of Interval Probabilities, in *Proceedings, Workshop on Conditionals, Information, and Inference*, pp. 195-209, May 2002, Hagen, Germany.
40. **Alex Dekhtyar**, Judy Goldsmith and Janice Pearce, (2001), *When Plans Distinguish Bayes Nets*, in *Proceedings, Workshop on Uncertainty in AI, KI-2001*, pp. 21–36, September 2001, Vienna, Austria.
41. **Alex Dekhtyar**, Judy Goldsmith and Sean Hawkes, (2001) Semistructured Probabilistic Databases (2001), in *Proceedings, Conference on Statistical and Scientific Database Management Systems (SS-DBM 2001)*, pp. 36–45, July 2001, Fairfax, VA.
42. **Alex Dekhtyar**, M.I. Dekhtyar and V.S. Subrahmanian, (1999), Temporal Probabilistic Logic Programs in *Proceedings, International Conference on Logic Programming (ICLP'99)*, pp. 109–123, December 1999, Las Cruces, NM.
43. M.I. Dekhtyar, **Alex Dekhtyar** and V.S. Subrahmanian, (2003), Hybrid Probabilistic Programs: Algorithms and Complexity, in *Proceedings of Conference on Uncertainty in Artificial Intelligence (UAI'99)*, pp. 160–169, July 1999, Stockholm, Sweden.
44. **Alex Dekhtyar** and V.S. Subrahmanian,(1997), Hybrid Probabilistic Programs, in *Proceedings, International Conference on Logic Programming (ICLP'97) (ed. L. Naish)*, MIT Press, pp. 391–405, July 1997, Leuven, Belgium.
45. **Alexander M. Dekhtyar**, (1994), A Multiplicative Linear Logic for Resource Transformation Nets, in *Proceedings, International Conference on Logic Foundations of Computer Science (LFCS'94)* (ed. A. Nerode, E. Dantsin), LNCS, Vol. 620, pp. 81–88.

## Refereed Demos

1. Krol Kevin Mathias, Casey Lengacher, Derek Williams, Austin Cornett, **Alex Dekhtyar**, Judy Goldsmith, (2006), Factored MDP Elicitation and Plan Display, demo *Proceedings, The Twenty-First National Conference on Artificial Intelligence (AAAI-06)*, July 2006, Boston, MA.
2. Ionut E. Iacob, **Alex Dekhtyar**, Dorothy Carr Porter, Kevin Kiernan, (2006) Extended XQuery for Digital Libraries, software demo, *Proceedings, Joint Conference on Digital Libraries (JCDL'2006)*, p. 378, June 2006, Chapel Hill, NC.
3. Ionut E. Iacob and **Alex Dekhtyar**, (2005), A Framework for Processing Complex Document-centric XML with Overlapping Structures, demo, in *Proceedings, ACM SIGMOD Conference*, pp. 897–899, June 2005, Baltimore, MD.
4. Ionut E. Iacob and **Alex Dekhtyar**, (2005), Processing XML documents with Overlapping Hierarchies, demo, in *Proceedings, 5th Joint Conference on Digital Libraries (JCDL'05)*, p. 409, June 2005, Denver, CO.
5. **Alex Dekhtyar**, Ionut E. Iacob, Jerzy W. Jaromczyk, Kevin Kiernan, Neil Moore and Dorothy Carr Porter, (2005), Building Image-based Electronic Editions using the Edition Production Technology, demo, in *Proceedings, 5th Joint Conference on Digital Libraries (JCDL'05)*, p. 406, June 2005, Denver, CO.
6. Ionut E. Iacob, **Alex Dekhtyar**, Jerzy W. Jaromczyk, Kevin Kiernan, Neil Moore, Dorothy Carr Porter, (2005), Edition Production Technology: an Eclipse Based Platform for Building Image-Based Electronic Editions, demo, in *Proceedings, International ACH-ALLC Conference-2005*, pp. 89-90, June 2005, Victoria, Canada.

## Posters and Workshop Presentations

1. **Alex Dekhtyar**, Developing an Undergraduate Course in Knowledge Discovery from Data, *poster, 12th CSU Regional Symposium on University Teaching*, May 2009, Cal Poly, San Luis Obispo.
2. **Alex Dekhtyar**, Jane Hayes, Judy Goldsmith, (2007), Uncertainty as the Source of Knowledge Transfer Opportunity, (2007), *position paper, First International Workshop on Living with Uncertainty in Software Engineering (IWLU'2007)*, Atlanta, GA, November 2007.
3. **Alex Dekhtyar**, Jane Huffman Hayes, (2006), Good Benchmarks are Hard to Find: Toward the Benchmark for Information Retrieval Applications in Software Engineering, *position paper, working session on Information Retrieval in Software Engineering, International Conference on Software Maintenance (ICSM)*, September 2006, Philadelphia, PA.
4. Ionut E. Iacob, **Alex Dekhtyar**, (2006), Multihierarchical XQuery, software demonstration, *3rd International Workshop on XQuery Implementation, Experience and Perspectives (XIME-P'06) at ACM SIGMOD'06*, June 2006, Chicago, IL.
5. **Alex Dekhtyar**, Raphael Finkel, Judy Goldsmith, Beth Goldstein and Cynthia Isenhour, (2005), Adaptive decision support for planning under hard and soft constraints, *Proceedings, AAAI Spring Symposium on Challenges to Decision Support in a Changing World*, March 2005, Palo Alto, CA.

6. Wenzhong Zhao, **Alex Dekhtyar**, Jiangyu Li, Eric Jessup and Judy Goldsmith, (2003), Building Bayes Nets with Semistructured Probabilistic Databases, poster presentation, *International Conference on Conceptual Modeling (ER'2003)*, October 2003, Chicago, IL.
7. **Alex Dekhtyar**, V.S. Subrahmanian, (1998), Proof Procedures for Hybrid Probabilistic Programs, in *Proceedings, Workshop on Probabilistic Logic And Randomized Computation'98, European Summer School on Logic Language and Information (ESLI'98)*, August 1998, Saarbrueken, Germany.

## Non-Refereed Publications

### Invited Papers

1. Ander de Keijzer, Maurice van Keulen, **Alex Dekhtyar** (2007) Report on the First VLDB Workshop on Management of Uncertain Data (MUD). *SIGMOD Record*, Vol. 36, No. 4., pp. 57-58.
2. Ionut E. Iacob, **Alex Dekhtyar**, Dorothy Carr Porter, Kevin Kiernan, (2007) Extended XQuery for Digital Libraries, *IEEE Technical Committee on Digital Libraries Bullutin*, Vol. 3, Issue 2, Summer 2007, <http://www.ieee-tcdl.org/Bulletin/current/dekhtyar/dekhtyar.html>.
3. **Alex Dekhtyar**, Ionut E. Iacob, Jerzy W. Jaromczyk, Kevin Kiernan, Neil Moore, Dorothy Carr Porter, (2005), Building Image-based Electronic Editions using the Edition Production Technology, *IEEE Technical Committee on Digital Libraries Bullutin*, Vol 2, Issue 1, 2005,
4. Ionut E. Iacob, Alex Dekhtyar, (2005), Processing XML Documents with Overlapping Hierarchies, *IEEE Technical Committee on Digital Libraries Bullutin*, Vol 2, Issue 1, 2005.
5. Wenzhong Zhao, **Alex Dekhtyar**, Judy Goldsmith, Eric Jessup and Jiangyu Li, (2004), Building Bayes Nets with Semistructured Probabilistic Databases, *GI-EMISA Forum*, Band 24, Number 1, pp. 29–30.
6. Jane Huffman Hayes, James M. Carigan and **Alex Dekhtyar**, (2004) Recommending a Framework for Comparison of Requirements Tracing Experiments, in *Proceedings, Workshop on Empirical Studies of Software Maintenance (WESS 2004)*, September 2004, Chicago, IL.
7. Kevin Kiernan, **Alex Dekhtyar**, Jerzy W. Jaromczyk, Dorothy Carr Porter and Ionut E. Iacob, (2004), Edition Production Technology (EPT) and the ARCHway Project, *DigiCULT Newsletter*, pp. 36-39, August, 2004 .

### Book Reviews

1. **Alex Dekhtyar**, (1999), Review of *Logic For Applications*, by A. Nerode and R. Shore, in *SIGACT NEWS*, Vol. 30, No. 3, 1999.
2. **Alex Dekhtyar**, (1998), Review of *Vicious Circles*, by J. Barwise and L. Moss, in *SIGACT NEWS*, Vol 29, No. 4., 1998.
3. **Alex Dekhtyar**, (1997), Review of *Reasoning About Knowledge*, by R. Fagin, J. Halpern, Y. Moses, M. Vardi, in *SIGACT NEWS*, Vol. 28, No. 4, 1997.

## Technical Reports

### California Polytechnic State University

1. **Alex Dekhtyar**, Michael I. Dekhtyar, (2007) The Theory of Interval Probabilistic Logic Programs, *Cal Poly Department of Computer Science Technical Report*, CPSLO-CSC-07-02, August 2007.

### University of Kentucky

1. **Alex Dekhtyar**, Ionut E. Iacob and Srikanth Methuku, (2005), Searching Multi-Hierarchical XML Documents: the Case of Fragmentation, *University of Kentucky Department of Computer Science Technical Report*, TR 439-05.
2. Ionut E. Iacob and **Alex Dekhtyar**, (2005), Queries over Overlapping XML Structures, *University of Kentucky Department of Computer Science Technical Report*, TR 438-05.
3. Jane Huffman Hayes, **Alex Dekhtyar** and K.S. Sundaram, (2005), Text Mining for Software Engineering: How Analyst Feedback Impacts Final Results, *University of Kentucky Department of Computer Science Technical Report*, TR 434-05
4. Jane Huffman Hayes, **Alex Dekhtyar**, K.S. Sundaram and Sarah Howard, (2004), On Effectiveness of User Feedback-based Information Retrieval Methods for Requirements Tracing, *University of Kentucky Department of Computer Science Technical Report*, TR 423-04.
5. Jane Huffman Hayes, **Alex Dekhtyar** and K.S. Sundaram, (2004), Measuring the Effectiveness of Retrieval Techniques in Software Engineering, *University of Kentucky Department of Computer Science Technical Report*, TR 422-04.
6. Jane Huffman Hayes and **Alex Dekhtyar**, (2004), A Framework for Comparing Requirements Tracing Experiments, *University of Kentucky Department of Computer Science Technical Report*, TR 408-04.
7. Ionut E. Iacob, **Alex Dekhtyar** and Michael I. Dekhtyar, (2004), Checking Potential Validity of XML Documents, *University of Kentucky Department of Computer Science Technical Report*, TR 403-04.
8. **Alex Dekhtyar**, Jerzy W. Jaromczyk, Kevin Kiernan, Neil Moore and Dorothy Carr Porter, (2004), Support for XML Markup of Image-based Electronic Editions, *University of Kentucky Department of Computer Science Technical Report*, TR 394-04.
9. Jane Huffman Hayes, **Alex Dekhtyar**, K.S. Sundaram and Sarah Howard, (2004), Helping Analysts Trace Requirements: An Objective Look, *University of Kentucky Department of Computer Science Technical Report*, TR 392-04.
10. Wenzhong Zhao, **Alex Dekhtyar** and Judy Goldsmith, (2003), Databases For Interval Probabilities, *University of Kentucky Department of Computer Science Technical Report*, TR 386-03.
11. Wenzhong Zhao, **Alex Dekhtyar** and Judy Goldsmith, (2003), A Framework for Management of Semistructured Probabilistic Data, *University of Kentucky Department of Computer Science Technical Report*, TR 385-03.
12. **Alex Dekhtyar** and Ionut E. Iacob, (2003), A Framework for Management of Concurrent XML Markup, *University of Kentucky Department of Computer Science Technical Report*, TR 364-03.

13. Wenzhong Zhao, **Alex Dekhtyar**, Judy Goldsmith, (2003), Representing Probabilistic Information in XML, *University of Kentucky Department of Computer Science Technical Report*, TR 370-03.
14. **Alex Dekhtyar** and Judy Goldsmith, (2002), The Bayesian Advisor Project, *University of Kentucky Department of Computer Science Technical Report*, TR 337-02.
15. **Alex Dekhtyar**, Judy Goldsmith and Janice Pearce, (2001), When Plans Distinguish Bayes Nets, *University of Kentucky Department of Computer Science Technical Report*, TR 325-01.
16. **Alex Dekhtyar** and Judy Goldsmith, (2001), The Bayesian Advisor Project: Modeling Academic Advising, *University of Kentucky Department of Computer Science Technical Report*, TR 323-01.
17. Sean Hawkes and **Alex Dekhtyar**, (2001), Designing Markup Languages for Probabilistic Information, *University of Kentucky Department of Computer Science Technical Report*, TR 319-01.
18. **Alex Dekhtyar**, Judy Goldsmith and Sean Hawkes, (2001), Semistructured Probabilistic Databases, *University of Kentucky Department of Computer Science Technical Report*, TR 318-01.

### University of Maryland

1. **Alex Dekhtyar**, Fatma Ozcan, Robert Ross and V.S. Subrahmanian, (2001), Probabilistic Temporal Databases, II: Calculus and Query Processing, *University of Maryland Technical Report*, CS-TR-4301.
2. **Alex Dekhtyar**, Robert Ross and V.S. Subrahmanian, (1999), Probabilistic Temporal Databases, I: Algebra, *University of Maryland Technical Report*, CS-TR-3987.
3. Michael I. Dekhtyar, **Alex Dekhtyar** and V.S. Subrahmanian, (1999), Hybrid Probabilistic Programs: Algorithms and Complexity, *University of Maryland Technical Report*, CS-TR-3969.
4. **Alex Dekhtyar** and V.S. Subrahmanian, (1997), Hybrid Probabilistic Programs, *University of Maryland Technical Report*, CS-TR-3883.

### Talks and Presentations

1. “Techniques for Requirements Traceability Matrix (RTM) Evaluation”, NASA Software Assurance Symposium (SAS), July 18, 2006, Morgantown, WV.
2. “Center of Excellence for Traceability”, NASA Software Assurance Symposium (SAS), July 20, 2006, Morgantown, WV.
3. “RETRO: Requirements Tracing On-target”, software demonstration, NASA Software Assurance Symposium (SAS), August 10, 2005, Morgantown, WV.
4. “The ARCHway Project: Building Image-Based Electronic Editions of Historic Manuscripts”, invited talk, Department of Computer Science, University of Waterloo, Waterloo, Canada, April 2005.
5. “RETRO: REquirements TRacing On-target”, with J. Hayes, Training Session, NASA IV&V Center, Fairmont, WV, January 2005.

6. “The ARCHway Project”, software demonstration, *NSF IDM PI Workshop*, Boston, MA, October 2004.
7. “Management of Concurrent Document-Centric XML Markup in the ARCHway project”, invited talk, IBM Almaden Research Center, San Jose, CA, September 12, 2003.
8. “Robust Requirements Tracing Using Information Retrieval, Part II”, with J. Hayes, NASA SAS (Software Assurance Symposium, Morgantown, WV, Aug 30, 2003).
9. “Robust Requirements Tracing Using Information Retrieval”, with J. Hayes, Training Session, NASA IV&V Center Fairmont, WV, June 16 2003.
10. “Conditionalization of Interval Probabilities: The Good, The Bad and The Ugly”, Fall 2002 Midwest Theory Day, DePaul University, Chicago, December 6, 2002.
11. “An Introduction to XML”, ACM Student Lecture Series, University of Kentucky, November 2002.
12. “Robust Requirements Tracing Using Information Retrieval”, NASA SAS (Software Assurance Symposium), Berkeley Springs, WV, September 2002.
13. “Possible Worlds Semantics for Probabilistic Logic Programs”, Fall 2000 Midwest Theory Day, DePaul University, Chicago, December 2, 2000.
14. “Probabilistic Temporal Databases”, Decision Science and Information Systems Colloquium, Gatton College Of Business and Economics, University of Kentucky, Spring 2001.
15. “Bayesian Advisor Project”, Department of Statistics Colloquium, University of Kentucky, Spring 2001, (with Judy Goldsmith).

## Grants

### Prior Support

1. ”Towards a robust undergraduate overview course on Knowledge Discovery from Data.”, PI, Cal Poly Center for Teaching and Learning Grant, January 2009 - December 2009 \$4,000.
2. ”Management of XML for Digital Library Applications”, PI, Cal Poly State Faculty Support Grant, November 2008 — July 2009, \$4,000
3. “Visualization of Decision-Theoretic plans”, PI, Cal Poly Honors Project Program, January 2008 – December 2008, \$4,000
4. “International Symposium on Grand Challenges in Traceability”, Co-PI, (Jane Hayes, PI, Jane Cleland-Huang, Brian Barenbach, co-PIs), NSF, September 2006 - August 2007, \$25,000.
5. “Center for Excellence in Traceability”, Co-PI, (Jane Hayes, PI), NASA, September 2006 - August 2007, \$203,000
6. “ITR: Decision-Theoretic Planning with Constraints”, co-PI, (Judy Goldsmith, PI, Mirosław Trzuszczynski, Beth Goldstein, co-PIs), NSF (medium-size ITR), September 2003 — August 2007, \$1,200,000

7. “Improving Requirements Tracing tools”, Co-PI, (Jane Hayes, PI), NASA, September 2005 – August 2006, \$50,000
8. “Improving IV&V Using Information Retrieval and Text Mining” co-PI, (Jane Hayes, PI), NASA, August 2004 – July 2005 \$134,916
9. “ITR: The Archway Project”, co-PI, (Kevin Kiernan, PI; Jerzy Jaromczyk, Co-PI), NSF, (small ITR), September 2002 – August 2004, \$224,00
10. “Robust Requirments Tracing via Internet Search Technology: Phase II”, NASA, PI, (Jane Hayes, Co-PI), January 2003 – December 2003, \$86,616
11. “Robust Requirements Tracing via Internet Search Technology: Phase I”, NASA, co-PI, (Jane Hayes, PI), January 2002 – December 2002, \$46,000

## Awards

- Best Paper Award, NASA Software Assurance Symposium (SAS), 2006, for “Advancing Candidate Link Generation for Requirements Tracing: the Study of Methods” paper in *IEEE TSE* (with Jane Hayes, Senthil Sundaram).
- The Award for Best Research Initiative in 2005, NASA IV&V Center, Fairmont, WV, for work on the initiative “Imporving Reqts Tracing and IV&V via IR and Text Mining,” (with Jane Hayes).
- The “Buzz” Award, NASA SAS (Software Assurance Symposium), 2003, for “Robust Requirements Tracing via Information Retrieval” project, (with Jane Hayes).
- “Bayesian Advisor Project”, winner, best poster, Department of Computer Science Industry Day, Spring 2001, with Judy Goldsmith and Brett Young.

## Student supervision

### California Polytechnic State University

#### Current M.S. students

1. J.T. Gilkeson, *TBD*, Fall 2009 – present.
2. Matthew Robertson, *Netflix Challenge*, Spring 2009 – present.
3. David Cuddeback, *Traceability: study of analyst*. Winter 2009 - present.
4. Gabriel De La Calzada, *Measuring quality of information on Wikipedia*, Spring 2008 — present.
5. Jong Lee, *XML-based Persistant Object Storage*, Winter 2008 – present.

#### Current Senior Projects

1. Andrew Chan, *Tag based image discovery on community web sites*, Fall 2009 – present.
2. Nathan Dailey, *Software for Bioinformatics education*, Fall 2009 – present.

3. Briano Planeta, *Single-site web search engine*, Fall 2009 – present.
4. Arlo While, *Event Management for Cal Poly Web Site*, Summer 2009 – present.
5. Joshua Lange, *Water District Scheduling System*, Fall 2008 — present.

### **M.S. students defended**

- Michael Huffman, *Automated Thin Object Management System*, Spring 2009.
- Chad Smith (work performed under direction of Laurian Chirica), *Mining commercial ODM repositories*. Winter 2009.
- Evan Rosson, *Semistructured Probabilistic Database Management System supported by native XML DBMS*, Spring 2008.

### **Past senior projects**

**2008-2009:** Jamie Ray, Brian Colvin, Jacob Verburg, Kyle Cushing, Asaf Meisels, Jeffrey Smith.

**2007-2008:** Vinay Anantharaman, Ryder Ross, Derek Johnson, Steven Weigand.

### **Past Honors Research Projects**

1. Brian Oppenheim, *Visualisation of Decision-Theoretic Plans*, Winter 2008 – Spring 2009.
2. Evan Hecht, *Visualisation of Decision-Theoretic Plans*, (Winter 2008 – Spring 2009).

## **University of Kentucky**

### **Ph.D. students defended:**

- Senthil Karthikeyan Sundaram, Ph.D., June 2006, (co-advisee, primary advisor, Dr. Jane Hayes), *Tracing Textual and Non-textual Requirements Using Information Retrieval Techniques*.
- Iounut Emil Iacob, Ph.D., November, 2005, *Algorithms for Management of Document-Centric XML Data*.
- Wenzhong Zhao, Ph.D., Summer 2004, *Semistructured Probabilistic Databases*.

### **M.S. students defended:**

1. Sunil Kolawar, M.S. project, Summer 2007, *Paginated back-end for RETRO*.
2. Saad Masood Ijad, M.S. project, Fall 2006, *Signature Joins for Handheld Devices*
3. Karthik Ramkumar, M.S. project, Fall 2006, *A Prototype Multihierarchical DBMS: Query Engine*
4. Srikanth Vasamreddy, M.S. project, Fall 2006, *A Prototype Multihierarchical DBMS: Index Structures*
5. Karthikeyan Sethuramasubbu, M.S. project, Fall 2006, *Distributed DOM for Multihierarchical XML*.

6. Sravanthi Vadlamudi, M.S. project, Summer 2006, *A New Front End for RETRO*.
7. Swati Tata, Spring 2006, *Translating Multihierarchical XPath into XQuery*.
8. Samuel Wesley Coyle, Spring 2006, *A Data Warehouse for Web Server Logs*,
9. Prakash Narayanan, M.S. project, Spring 2005 *Data Storage Techniques for Semistructured Probabilistic DBMS*.
10. Srikanth Methuku, M.S. project, Spring 2005 *Extended XPath for Multihierarchical XML: the Case of Fragmentation* .
11. Vikram Goplan, M.S. Fall 2004, *Efficiently Learning Probabilistic Distributions for Bayes Networks from Instance Data*.
12. Ganapathi Chidambaram, M.S. project, Summer 2004, *Latent Semantic Indexing for Requirements Tracing*.
13. Hua Shao, M.S. project, Spring 2004, *Information Retrieval System for Kentucky Kernel*.
14. Jiangyu Li, M.S. project, Spring 2004, *Probability Elicitation Tool*.
15. Gaganpreet Kaur, M.S. project, Spring 2004, *Multimedia Presentation Systems Using XML*.
16. Sarah Howard, M.S. project, Fall 2003, *Information Retrieval Techniques for Requirements Tracing*.
17. Husamuddin Nasir, M.S. project, Summer 2003, *A Lightweight Document-Centric XML Editor*.
18. Wenqiong Chen, M.S. project, Summer 2001, *Developing Multimedia Presentations using XML and JMF*.

#### **Ph.D. Committee Service**

1. Shuting Xu, Department of Computer Science, Dr. Jun Zhang, advisor, *Ph.D., Summer 2005*.
2. Sergey Tarima, Department of Statistics, Dr. Richard Kryscio, advisor, *Ph.D., Summer 2005* (outside committee member).
3. Christopher Lusena, Department of Computer Science, Dr. Judy Goldsmith, advisor, *Ph.D, Summer 2001*.

#### **Teaching: Courses Taught**

- Web Mining, CPSU, Fall 2009.
- M.S. Thesis Seminar, CPSU, Fall 2009.
- Knowledge Discovery from Data, CPSU, Spring 2009.
- Fundamentals of Computer Science I, CPSU, Fall 2008, Fall 2009.
- Organization and Implementation of DBMS, CPSU, Spring 2008, Winter 2009.

- Intro to Databases, CPSU, Fall 2007, Spring 2008.
- Database Modeling, Design and Implementation, CPSU, Winter 2008, Spring 2009.
- Web Programming, UK, Fall 2005, Spring 2006.
- XML and Management of Semistructured Data, UK, Spring 2005, CPSU, Fall 2007.
- Data Mining, UK, Spring 2003, Spring 2004.
- Introduction to Database Systems, UK, Spring 2002, Spring 2003, Fall 2003, Spring 2005, Spring 2006.
- Information Retrieval, UK, Fall 2001.
- Database Systems, UK, Spring 2001, Fall 2002, Spring 2004, Fall 2005, Fall 2006.
- Advanced Topics in Database Systems, UK, Fall 2000.
- Introduction to Discrete Mathematics, UMd, Summer 1999.
- Introduction to Computer Science (C Programming), UMd, Summer 1998.
- Introduction to Internet, UMd, Summer 1996.
- Programming Languages, UMd, Summer 1996.

## **Teaching: Courses Developed**

- CSC 560: Advanced topics in databases: Web Mining, CPSU, (taught Fall 2009)
- CSC 466: Knowledge Discovery from Data, CPSU, (taught Spring 2009).
- CS 316: Web Programming, UK, (taught Fall 2005, Spring 2006).
- Data Mining, UK, (taught Spring 2003, Spring 2004).
- XML and Management of Semistructured Data, UK, (taught Spring 2005 as CS 685).
- Information Retrieval, UK, (taught Fall 2001 as CS 585).
- Advanced Databases, UK (taught Fall 2000 as CS 685).

## **Professional Activities**

- Program Committee member
  - Special Track on Uncertainty, Florida Atlantic AI Symposium (FLAIRS), 2004.
  - ICDE Workshop on XML Schema and Data Management (XSDM), 2005, 2006.
  - ICSE Workshop on Mining Software Repositories (MSR), 2005.
  - ACM CIKM Workshop on Web Information and Data Management, (WIDM) 2005.

- ASE Workshop on Traceability in Emerging Forms of Software Engineering, (TEFSE) 2005.
- AAAI Conference, 2006, 2007.
- International Workshop on Predictive Models in Software Engineerings (PROMISE) 2006, 2007, 2008, 2009.
- International XML Database Symposium (XSym), 2006.
- Conference on Information and Knowledge Management (CIKM), 2008, 2009.
- International Workshop on Management of Uncertain Data (MUD) , 2007 (also co-editor of proceedings), 2008.
- Co-organizer (with Jane Hayes, Jane Cleland-Huang), Workshop on Grand Challenges in Traceability, August 4-5, 2006, Fairmont, WV.
- Local Chair, International Symposium on Grand Challenges in Traceability (ISGCT'2007), March 22-23, Lexington, KY.
- Referee for
  - Empirical Software Engineering.
  - Annals of Mathematics and Artificial Intelligence.
  - ACM Transactions on Database Systems.
  - VLDB Journal
  - Data and Knowledge Engineering.
  - IEEE Transactions on Knowledge and Data Engineering.
  - Theoretical Computer Science.
  - Machine Learning Journal.
  - Journal of AI Research (JAIR).
  - SIGACT News (book reviews).
  - International Conference on Logic Programming (ICLP), 2002.
  - International Conference on Logic Programming and Non-Monotonic Reasoning (LPNMR), 1999.
  - International Conference on Information Systems (ICIS), 1999.
  - International Conference on Extending Database Technology (EDBT), 1999, 2000.
  - ACM SIGMOD Conference, 2001.
  - Conference on Verly Large Databases (VLDB), 2001.
  - International Symposium on Foundations of Information and Knowledge Systems (FOIKS), 2001.
  - International Joint Conference on Artificial Intelligence (IJCAI), 2003.
  - International Conference on Constraint Programming (CP), 2003.
  - FLAIRS, 2005.
  - International Computer Software and Applications Conference (COMPSAC), 2005.
  - XSDM, 2005.
  - International Conference on Uncertainty in AI (UAI), 2005.

- American Association for AI (AAAI) Conference, 2005.
- Grants Panels
  - panelist (2000 – 2003, 2006, 2007), panel chair (2004–2005), Civilian Research Defense Foundation (CRDF).
 

CRDF oversees grants for collaborative research between US and former Soviet Union researchers. Panelist duties included refereeing of 10-20 proposals per panel and panel participation. Panel chair duties included refereeing of 10-20 proposals per panel, participation in panel organization and panel conduct.
- University and Department service
  - Colloquium Committee, Department of Computer Science, California Polytechnic State University, Fall 2008 – present.
  - Project-Based Learning Task Force, California Polytechnic State University, Winter 2008 – Spring 2008.
  - Graduate Committee, Department of Computer Science, California Polytechnic State University, Fall 2007 – present.
  - Graduate Student Committee, Department of Computer Science, University of Kentucky, Fall 2002 - Spring 2004.
  - University Electronic Thesis Committee, University of Kentucky, Fall 2001 - Fall 2004.
  - Departmental Report/Newsletter Committee, Department of Computer Science, University of Kentucky, Fall 2000 – Fall 2001, Fall 2003 – Spring 2004, Spring 2005 - Fall 2005. Reports/Newsletters co-edited (with Andy Klapper):
    - \* Departmental Newsletter, Spring/Summer 2005, Fall 2005.
    - \* Departmental Report, Spring 2004.
    - \* Departmental Report, Fall 2001.
  - Student advisor on graduate admissions, Department of Computer Science, University of Maryland, 1999.
  - Member of Graduate Student Executive Council, Department of Computer Science, University of Maryland, 1997 - 1999.
  - Developed proposal for CS 316, Web Programming course, Fall 2004.
- Other activities
  - Volunteer session coordinator, National Undergraduate Research Conference (NCUR 2001), Spring 2001.
- Association Membership
  - Member, IEEE Computer Society, since 2006.
  - Member, Association for Computing Machinery, since 2000.
  - Member, ACM SIGMOD, ACM KDD, ACM SIGIR, since 2000.
  - Member, American Association for Artificial Intelligence, since 1999.
  - Member, Association for Logic Programming, since 1997.

## Advisors

**Ph.D. Advisor.** V.S. Subrahmanian, Department of Computer Science, University of Maryland at College Park.

Ph. D. Thesis: Reasoning with Probabilities and Time.

**Undergraduate Advisor.** Mikhail A. Taitlin, Department of Computer Science, School of Applied Mathematics and Cybernetics, Tver State University, Tver, Russia.

Undergraduate Thesis: Multiplicative Linear Logic for Resource Transformation Nets.