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*Associate Professor of Computer Science at Technion, Israel*

## CONTACT INFORMATION

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## RESEARCH INTERESTS

**Data management:** database theory; information extraction and retrieval; text databases; inconsistent databases; probabilistic databases; databases and machine learning; preference/social data management; query optimization. **Algorithms:** enumeration.

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## EMPLOYMENT HISTORY

- Currently:** Associate Professor at Technion – Israel Institute of Technology
- 2014–2015:** Computer Scientist at LogicBlox, Inc.
- 2010–2014:** Research Staff Member at IBM Research – Almaden (Search and Analytics Department)
- 2008–2010:** Postdoctoral Scholar at IBM Research – Almaden (Theory Group).
- 2004–2008:** Teaching Assistant at The Hebrew University of Jerusalem, Israel.
- 2004–2005:** Tutor at The Open University, Israel.

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## EDUCATION

- 2005–2008:** Ph.D. in *Computer Science*, The Hebrew University of Jerusalem
- Research advisor: Yehoshua Sagiv
  - Thesis topic: *Querying Paradigms for the Web*
  - *Summa cum laude*
- 2003–2004:** M.Sc. in *Computer Science*, The Hebrew University of Jerusalem
- Research advisor: Yehoshua Sagiv
  - Thesis topic: *Interconnection Semantics for XML*
  - Thesis grade: 100 (cumulative average: 98)
  - *Summa cum laude*
- 2000–2002:** B.Sc. in *Computer Science* (major) and *Mathematics* (minor), The Hebrew University of Jerusalem
- Cumulative average: 99.12
  - *Summa cum laude*

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## PUBLIC PROFESSIONAL ACTIVITIES

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### Leading Organization

- Workshop co-chair of SIGMOD 2018 and 2019
- Program committee chair of the *International Conference on Database Theory (ICDT)*, 2018
- Group chair at ACM SIGMOD 2017
- Co-chair of ACM SIGMOD 2016 workshop on *Web and Databases (WebDB 2016)*
- Co-chair of ACM SIGMOD/PODS 2014 workshop on *Big Uncertain Data (BUDA 2014)*

### Journal Editorial Boards

- Associate Editor of the *Journal of Computer and System Sciences (JCSS)*, since 2014.

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## AWARDS AND RECOGNITION

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- The ACM SIGMOD Research Highlight Award, 2018.
- Taub Leaders in Science Fellowship, 2015.
- Outstanding Reviewer Award in WebDB 2015.
- Invited tutorial speaker for the 2014 ACM Symposium on Principles of Database Systems (PODS).
- Extended scholarship program for excellent doctorate students of The Hebrew University, 2007–2008.
- The Dimitris N. Chorafas Foundation Prize for research on Data Extraction on the Internet, 2006.
- Leibniz student fellowship, 2005–2007.
- Dean’s prize, The Hebrew University, 2002.
- The Israeli-Knesset Prize for academic excellence, 2001 and 2004.
- Rector’s prize, The Hebrew University, 2001 and 2004.

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## RESEARCH GRANTS

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- **July 2018 – July 2021:** National Science Foundation and United States – Israel Binational Science Foundation (NSF-BSF), *Databases Meet Computational Social Choice*. PIs: Benny Kimelfeld, Phokion Kolaitis, Julia Stoyanovich. Amount: USD 120,000.
- **January 2017 – December 2017:** German-Israeli Foundation (GIF), *Extending Databases with Fundamentals of Text Extraction*. PI: Benny Kimelfeld. Amount: EURO 15,000.
- **October 2015 – October 2019:** Israel Science Foundation, *Incorporating Priorities in the Management of Inconsistent Databases*. PI: Benny Kimelfeld. Amount: NIS 960,000.
- **October 2015 – October 2017:** United States – Israel Binational Science Foundation (BSF), *Aggregation Methods for Partial Preferences*. PIs: Benny Kimelfeld and Julia Stoyanovich. Amount: USD 75,000.

- **October 2015 – October 2017:** Israel Science Foundation, *Equipment Grant*. PI: Benny Kimelfeld. Amount: NIS 305,000.

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## INVITED TALKS

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- Some Clique Enumerations in Databases (Keynote Speech). In *WEPA 2018*, Pisa, Italy, 2018.
- Database Uncertainty for Computational Social Choice (Keynote Speech). In *Colloquium Logicum 2018*, Bayreuth, Germany, 2018.
- Database Foundations for Modern Data (Keynote Speech). In *International Conference on Big-Data and Cloud Computing (ICBDCC'17)*, Coimbatore, Tamilnadu, India, 2017.
- Preference-Based Data Repairing (Invited Tutorial). In *Scalable Uncertainty Management*, Nice, France, 2016.
- Foundations of Database Systems for Text Analytics (Keynote Speech). In *L'entreposage de données et l'analyse en ligne (EDA)*, Brussels, Belgium, 2015.
- Extending Datalog Intelligence (Keynote Speech). In *International Conference on Web Reasoning and Rule Systems (RR)*, Berlin, Germany, 2015.
- Database Foundations in Information Extraction (Invited Tutorial). In *ACM SIGMOD/PODS, Snowbird*, Utah, USA, 2014.
- On Approaches to Search over Structured Data. In *SIGMOD Workshop on Automatic Creation and Curation of Knowledge Bases*, Snowbird, Utah, USA, 2014.
- Foundational Research Propelled by Text Analytics (Keynote Speech). In *The Jornadas Chilenas de Computación (JCC)*, Talca, Chile, 2014.

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## PATENTS

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### Published

- Ching-Tien Ho, Benny Kimelfeld, Yunyao Li, Shivakumar Vaithyanathan. *Facilitating information extraction via semantic abstraction*. Filed Feb. 2015. Published Jul. 2018.
- Zhuowei Bao, Benny Kimelfeld, Yunyao Li. *Automatic Suggestion of Query-Rewrite Rules*. Filed May 2013. Published May. 2016.
- Tyler Baldwin, Howard Ho, Benny Kimelfeld, Yunyao Li, Congle Zhang. *Adaptive Parser-Centric Text Normalization*. Filed Dec. 2013. Published Jul. 2015.
- Benny Kimelfeld, Shivakumar Vaithyanathan. *Unsupervised Learning of Deep Patterns for Semantic Parsing*. Filed Aug. 2013. Published Feb. 2015.
- Benny Kimelfeld, Yunyao Li, Shivakumar Vaithyanathan. *SVO-Based Taxonomy-Driven Exhaustive Text Analytics*. Filed Sep. 2013. Published May. 2014.
- Benny Kimelfeld, Yunyao Li, Huahai Yang. *Improving Search Quality via Query Provenance Visualization*. Filed May 2012. Published Dec. 2013.

## Filed

- Liang Gou, Zhichao Hu, Benny Kimelfeld, Yunyao Li, Huahai Yang. *Visualizing and exploring natural-language text*. Filed Dec. 2015.
- Benny Kimelfeld, Yunyao Li, Christopher R. Palmer, Jerome M. Pesenti. *Domain Centric Natural Language Query Answering*. Filed Oct. 2015.
- Benny Kimelfeld, David P. Woodruff. *Estimating the Total Sales over Streaming Bids*. Filed Nov. 2014.

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## SCIENTIFIC PUBLICATIONS

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### Journal Articles

- [1] Benny Kimelfeld and Christopher Ré. A relational framework for classifier engineering. *ACM Trans. Database Syst.*, 43(3):11:1–11:36, October 2018.
- [2] Vince Bárány, Balder ten Cate, Benny Kimelfeld, Dan Olteanu, and Zografoula Vagena. Declarative probabilistic programming with datalog. *ACM Trans. Database Syst.*, 42(4):22:1–22:35, 2017.
- [3] Ronald Fagin, Benny Kimelfeld, Frederick Reiss, and Stijn Vansummeren. Declarative cleaning of inconsistencies in information extraction. *ACM Trans. Database Syst.*, 41(1):6, 2016.
- [4] Ronald Fagin, Benny Kimelfeld, Frederick Reiss, and Stijn Vansummeren. Document spanners: A formal approach to information extraction. *J. ACM*, 62(2):12, 2015.
- [5] Benny Kimelfeld and Christopher Ré. Transducing markov sequences. *J. ACM*, 61(5):32, 2014.
- [6] Benny Kimelfeld and Phokion G. Kolaitis. The complexity of mining maximal frequent subgraphs. *ACM Trans. Database Syst.*, 39(4):32, 2014.
- [7] Marie Jacob, Benny Kimelfeld, and Julia Stoyanovich. A system for management and analysis of preference data. *PVLDB*, 7(12):1255–1258, 2014.
- [8] Benny Kimelfeld, Jan Vondrák, and David P. Woodruff. Multi-tuple deletion propagation: Approximations and complexity. *PVLDB*, 6(13):1558–1569, 2013.
- [9] Benny Kimelfeld, Jan Vondrák, and Ryan Williams. Maximizing conjunctive views in deletion propagation. *ACM Transactions on Database Systems (TODS)*, 37(4):24, 2012.
- [10] Konstantin Golenberg, Benny Kimelfeld, and Yehoshua Sagiv. Optimizing and parallelizing ranked enumeration. *PVLDB*, 4(11):1028–1039, 2011.
- [11] Ronald Fagin, Benny Kimelfeld, and Phokion G. Kolaitis. Probabilistic data exchange. *Journal of the ACM (JACM)*, 58(4):15, 2011.
- [12] Benny Kimelfeld, Yuri Kosharovskiy, and Yehoshua Sagiv. Query evaluation over probabilistic XML. *The VLDB Journal*, 18(5):1117–1140, 2009.
- [13] Sara Cohen, Benny Kimelfeld, and Yehoshua Sagiv. Incorporating constraints in probabilistic XML. *ACM Transactions on Database Systems (TODS)*, 34(3), 2009.
- [14] Serge Abiteboul, Benny Kimelfeld, Yehoshua Sagiv, and Pierre Senellart. On the expressiveness of probabilistic XML models. *The VLDB Journal*, 18(5):1041–1064, 2009.
- [15] Benny Kimelfeld and Yehoshua Sagiv. Efficiently enumerating results of keyword search over data graphs. *Information Systems*, 33(4-5):335–359, 2008.
- [16] Sara Cohen, Benny Kimelfeld, and Yehoshua Sagiv. Generating all maximal induced subgraphs for hereditary and connected-hereditary graph properties. *Journal of Computer and System Sciences (JCSS)*, 74(7):1147–1159, 2008.

## Conference Papers (Fully Reviewed)

- [17] Christopher De Sa, Ihab F. Ilyas, Benny Kimelfeld, Christopher Ré, and Theodoros Rekatsinas. A formal framework for probabilistic unclean databases. To appear in ICDT, 2019.
- [18] Noam Ravid, Dori Medini, and Benny Kimelfeld. Ranked enumeration of minimal triangulations. To appear in PODS, 2019.
- [19] Liat Peterfreund, Balder Ten Cate, Ronald Fagin, and Benny Kimelfeld. Recursive programs for document spanners. To appear in ICDT, 2019.
- [20] Galia Nordon, Kira Radinsky, Uri Shalit, Benny Kimelfeld, Gideon Koren, and Varda Shalev. Building causal graphs from medical literature and electronic medical records. To appear in AAAI, 2019.
- [21] Batya Kenig and Benny Kimelfeld. Approximate inference of outcomes in probabilistic elections. To appear in AAAI, 2019.
- [22] Johannes Doleschal, Benny Kimelfeld, Wim Martens, Yoav Nahshon, and Frank Neven. Split-correctness in information extraction. To appear in PODS, 2019.
- [23] Pablo Barceló, Alexander Baumgartner, Victor Dalmau, and Benny Kimelfeld. Regularizing conjunctive features for classification. To appear in PODS, 2019.
- [24] Oren Mishali and Benny Kimelfeld. Towards linked data of bible quotations in jewish texts. In *DH*, pages 455–456. Red de Humanidades Digitales A. C., 2018.
- [25] Ester Livshits, Benny Kimelfeld, and Sudeepa Roy. Computing optimal repairs for functional dependencies. In *PODS*, pages 225–237. ACM, 2018.
- [26] Benny Kimelfeld, Phokion G. Kolaitis, and Julia Stoyanovich. Computational social choice meets databases. In *IJCAI*, pages 317–323. ijcai.org, 2018.
- [27] Batya Kenig, Lovro Ilijasic, Haoyue Ping, Benny Kimelfeld, and Julia Stoyanovich. Probabilistic inference over repeated insertion models. In *AAAI*. AAAI Press, 2018.
- [28] Dominik D. Freydenberger, Benny Kimelfeld, and Liat Peterfreund. Joining extractions of regular expressions. In *PODS*, pages 137–149. ACM, 2018.
- [29] Uzi Cohen, Batya Kenig, Haoyue Ping, Benny Kimelfeld, and Julia Stoyanovich. A query engine for probabilistic preferences. In *SIGMOD*, pages 1509–1524. ACM, 2018.
- [30] Ester Livshits and Benny Kimelfeld. Counting and enumerating (preferred) database repairs. In *PODS*, pages 289–301. ACM, 2017.
- [31] Benny Kimelfeld and Christopher Ré. A relational framework for classifier engineering. In *PODS*, pages 5–20. ACM, 2017.
- [32] Benny Kimelfeld, Ester Livshits, and Liat Peterfreund. Detecting ambiguity in prioritized database repairing. In *ICDT*, volume 68 of *LIPICs*, pages 17:1–17:20. Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, 2017.
- [33] Batya Kenig, Benny Kimelfeld, Haoyue Ping, and Julia Stoyanovich. Querying probabilistic preferences in databases. In *PODS*, pages 21–36. ACM, 2017.
- [34] Batya Kenig, Benny Kimelfeld, Haoyue Ping, and Julia Stoyanovich. A database framework for probabilistic preferences. In *AMW*, volume 1912 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2017.
- [35] Oren Kalinsky, Yoav Etsion, and Benny Kimelfeld. Flexible caching in trie joins. In *EDBT*, pages 282–293. OpenProceedings.org, 2017.
- [36] Nofar Carmeli, Batya Kenig, and Benny Kimelfeld. Efficiently enumerating minimal triangulations. In *PODS*, pages 273–287. ACM, 2017.
- [37] Adi Omari, Benny Kimelfeld, Eran Yahav, and Sharon Shoham. Lossless separation of web pages into layout code and data. In *KDD*, pages 1805–1814. ACM, 2016.

- [38] Benny Kimelfeld, Ester Livshits, and Liat Peterfreund. Recognizing determinism in prioritized repairing of inconsistent databases. In *AMW*, volume 1644 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2016.
- [39] Nofar Carmeli, Batya Kenig, and Benny Kimelfeld. On the enumeration of tree decompositions. In *AMW*, volume 1644 of *CEUR Workshop Proceedings*. CEUR-WS.org, 2016.
- [40] Vince Bárány, Balder ten Cate, Benny Kimelfeld, Dan Olteanu, and Zografoula Vagena. Declarative probabilistic programming with datalog. In *ICDT*, volume 48 of *LIPICs*, pages 7:1–7:19. Schloss Dagstuhl - Leibniz-Zentrum fuer Informatik, 2016.
- [41] Benny Kimelfeld and Christopher Ré. A database framework for classifier engineering. In *Alberto Mendelzon International Workshop (AMW)*, 2015.
- [42] Ronald Fagin, Benny Kimelfeld, and Phokion G. Kolaitis. Dichotomies in the complexity of preferred repairs. In *PODS*, pages 3–15. ACM, 2015.
- [43] Balder Ten Cate, Benny Kimelfeld, and Dan Olteanu. PDDL: Probabilistic programming with Datalog. In *Alberto Mendelzon International Workshop (AMW)*, 2015.
- [44] Devora Berlowitz, Sara Cohen, and Benny Kimelfeld. Efficient enumeration of maximal k-plexes. In *SIGMOD*, pages 431–444. ACM, 2015.
- [45] Molham Aref, Balder ten Cate, Todd J. Green, Benny Kimelfeld, Dan Olteanu, Emir Pasalic, Todd L. Veldhuizen, and Geoffrey Washburn. Design and implementation of the logicblox system. In *SIGMOD*, pages 1371–1382. ACM, 2015.
- [46] Molham Aref, Benny Kimelfeld, Emir Pasalic, and Nikolaos Vasiloglou. Extending datalog with analytics in LogicBlox. In *Alberto Mendelzon International Workshop (AMW)*, 2015.
- [47] Ronald Fagin, Benny Kimelfeld, Frederick Reiss, and Stijn Vansummeren. Cleaning inconsistencies in information extraction via prioritized repairs. In *PODS*, pages 164–175. ACM, 2014.
- [48] Congle Zhang, Tyler Baldwin, Howard Ho, Benny Kimelfeld, and Yunyao Li. Adaptive parser-centric text normalization. In *ACL (1)*, pages 1159–1168. The Association for Computer Linguistics, 2013.
- [49] Benny Kimelfeld and Yehoshua Sagiv. Extracting minimum-weight tree patterns from a schema with neighborhood constraints. In *ICDT*, pages 249–260. ACM, 2013.
- [50] Benny Kimelfeld and Phokion G. Kolaitis. The complexity of mining maximal frequent subgraphs. In *PODS*, pages 13–24. ACM, 2013.
- [51] Ronald Fagin, Benny Kimelfeld, Frederick Reiss, and Stijn Vansummeren. Spanners: a formal framework for information extraction. In *PODS*, pages 37–48, 2013.
- [52] Sara Cohen, Lior Ebel, and Benny Kimelfeld. A social network database that learns how to answer queries. In *CIDR*. www.cidrdb.org, 2013.
- [53] Benny Kimelfeld. A dichotomy in the complexity of deletion propagation with functional dependencies. In *PODS*, pages 191–202. ACM, 2012.
- [54] Zhuowei Bao, Benny Kimelfeld, and Yunyao Li. Automatic suggestion of query-rewrite rules for enterprise search. In *SIGIR*, pages 591–600. ACM, 2012.
- [55] Benny Kimelfeld, Jan Vondrák, and Ryan Williams. Maximizing conjunctive views in deletion propagation. In *PODS*, pages 187–198. ACM, 2011.
- [56] Benny Kimelfeld and Yehoshua Sagiv. Finding a minimal tree pattern under neighborhood constraints. In *PODS*, pages 235–246. ACM, 2011.
- [57] Ronald Fagin, Benny Kimelfeld, Yunyao Li, Sriram Raghavan, and Shivakumar Vaithyanathan. Rewrite rules for search database systems. In *PODS*, pages 271–282. ACM, 2011.
- [58] Sara Cohen, Benny Kimelfeld, Georgia Koutrika, and Jan Vondrák. On principles of egocentric person search in social networks. In *VLDS*, volume 880 of *CEUR Workshop Proceedings*, pages 3–6. CEUR-WS.org, 2011.

- [59] Zhuowei Bao, Benny Kimelfeld, and Yunyao Li. A graph approach to spelling correction in domain-centric search. In *ACL*, pages 905–914. The Association for Computer Linguistics, 2011.
- [60] Benny Kimelfeld and Christopher Ré. Transducing markov sequences. In *PODS*, pages 15–26. ACM, 2010.
- [61] Ronald Fagin, Benny Kimelfeld, Yunyao Li, Sriram Raghavan, and Shivakumar Vaithyanathan. Understanding queries in a search database system. In *PODS*, pages 273–284. ACM, 2010.
- [62] Ronald Fagin, Benny Kimelfeld, and Phokion Kolaitis. Probabilistic data exchange. In *ICDT*, pages 76–88. ACM, 2010.
- [63] Sara Cohen and Benny Kimelfeld. Querying parse trees of stochastic context-free grammars. In *ICDT*, pages 62–75. ACM, 2010.
- [64] Sara Cohen, Benny Kimelfeld, and Yehoshua Sagiv. Running tree automata on probabilistic XML. In *PODS*, pages 227–236. ACM, 2009.
- [65] Foto Afrati, Rada Chirkova, Manolis Gergatsoulis, Vassia Pavlaki, Benny Kimelfeld, and Yehoshua Sagiv. On rewriting XPath queries using views. In *EDBT*, pages 168–179. ACM, 2009.
- [66] Benny Kimelfeld and Yehoshua Sagiv. Revisiting redundancy and minimization in an XPath fragment. In *EDBT*, volume 261 of *ACM International Conference Proceeding Series*, pages 61–72. ACM, 2008.
- [67] Benny Kimelfeld, Yuri Kosharovskiy, and Yehoshua Sagiv. Query efficiency in probabilistic XML models. In *SIGMOD*, pages 701–714. ACM, 2008.
- [68] Konstantin Golenberg, Benny Kimelfeld, and Yehoshua Sagiv. Keyword proximity search in complex data graphs. In *SIGMOD*, pages 927–940. ACM, 2008.
- [69] Sara Cohen, Benny Kimelfeld, and Yehoshua Sagiv. Incorporating constraints in probabilistic XML. In *PODS*, pages 109–118. ACM, 2008.
- [70] Benny Kimelfeld and Yehoshua Sagiv. Maximally joining probabilistic data. In *PODS*, pages 303–312. ACM, 2007.
- [71] Benny Kimelfeld and Yehoshua Sagiv. Matching twigs in probabilistic XML. In *VLDB*, pages 27–38. ACM, 2007.
- [72] Benny Kimelfeld and Yehoshua Sagiv. Combining incompleteness and ranking in tree queries. In *ICDT*, volume 4353 of *Lecture Notes in Computer Science*, pages 329–343. Springer, 2007.
- [73] Benny Kimelfeld and Yehoshua Sagiv. Twig patterns: From XML trees to graphs. In *WebDB*, 2006.
- [74] Benny Kimelfeld and Yehoshua Sagiv. Incrementally computing ordered answers of acyclic conjunctive queries. In *Next Generation Information Technologies and Systems (NGITS), Sixth International Workshop*, volume 4032 of *Lecture Notes in Computer Science*, pages 33–38. Springer, 2006.
- [75] Benny Kimelfeld and Yehoshua Sagiv. Finding and approximating top-k answers in keyword proximity search. In *PODS*, pages 173–182. ACM, 2006.
- [76] Benny Kimelfeld, Eitan Kovacs, Yehoshua Sagiv, and Dan Yahav. Using language models and the HITS algorithm for XML retrieval. In *Comparative Evaluation of XML Information Retrieval Systems, Fifth International Workshop of the Initiative for the Evaluation of XML Retrieval (INEX)*, volume 4518 of *Lecture Notes in Computer Science*, pages 253–260. Springer, 2006.
- [77] Sara Cohen, Itzhak Fadida, Yaron Kanza, Benny Kimelfeld, and Yehoshua Sagiv. Full disjunctions: Polynomial-delay iterators in action. In *VLDB*, pages 739–750. ACM, 2006.
- [78] Benny Kimelfeld and Yehoshua Sagiv. Efficiently enumerating results of keyword search. In *DBPL*, volume 3774 of *Lecture Notes in Computer Science*, pages 58–73. Springer, 2005.
- [79] Benny Kimelfeld and Yehoshua Sagiv. Efficient engines for keyword proximity search. In *WebDB*, pages 67–72, 2005.
- [80] Sara Cohen, Yaron Kanza, Benny Kimelfeld, and Yehoshua Sagiv. Interconnection semantics for keyword search in XML. In *CIKM*, pages 389–396. ACM, 2005.

## Demo Papers (Fully Reviewed)

- [81] Tal Yahav, Oren Kalinsky, Oren Mishali, and Benny Kimelfeld. eLinda: Explorer for linked data. In *EDBT*, pages 658–661. OpenProceedings.org, 2018.
- [82] Zhuowei Bao, Benny Kimelfeld, Yunyao Li, Sriram Raghavan, and Huahai Yang. Gumshoe quality toolkit: administering programmable search. In *CIKM*, pages 2716–2718. ACM, 2012.
- [83] Hilit Achiezra, Konstantin Golenberg, Benny Kimelfeld, and Yehoshua Sagiv. Exploratory keyword search on data graphs. In *Proceedings of the ACM SIGMOD International Conference on Management of Data (SIGMOD Conferece)*, pages 1163–1166. ACM, 2010.
- [84] Benny Kimelfeld, Yehoshua Sagiv, and Gidi Weber. ExQueX: Exploring and querying XML documents. In *Proceedings of the ACM SIGMOD International Conference on Management of Data (SIGMOD Conferece)*, pages 1103–1106. ACM, 2009.

## Book Chapters

- [85] Benny Kimelfeld and Pierre Senellart. Probabilistic XML: Models and complexity. In Zongmin Ma and Li Yan, editors, *Advances in Probabilistic Databases for Uncertain Information Management*, pages 39–66. Springer-Verlag, May 2013.
- [86] Sara Cohen, Benny Kimelfeld, and Georgia Koutrika. A survey on proximity measures for social networks. In *SeCO Book*, volume 7538 of *Lecture Notes in Computer Science*, pages 191–206. Springer, 2012.
- [87] Benny Kimelfeld and Yehoshua Sagiv. Efficient engines for keyword proximity search. In Ravi Kumar and Jain Bandamutha, editors, *Dynamics of Search Engines: An Introduction*, pages 13–30. The Icfai University Press, 2007.

## Tutorials

- [88] Avigdor Gal and Benny Kimelfeld. Entity resolution in the Big Data era: Probabilistic DB support to entity resolution, 2015. A tutorial given in *18th International Conference on Extending Database Technology (EDBT)*.
- [89] Benny Kimelfeld. Database principles in information extraction. In *33rd ACM Symposium on Principles of Database Systems (PODS)*, 2014. Invited tutorial.
- [90] Sara Cohen, Benny Kimelfeld, and Yehoshua Sagiv. Enumerating large query results, 2009. A tutorial given in *25th International Conference on Data Engineering (ICDE)*.

## Review Articles (Published)

- [91] Benny Kimelfeld and Christopher Ré. A relational framework for classifier engineering. *SIGMOD Record*, 47(1):6–13, 2018.
- [92] Serge Abiteboul, Marcelo Arenas, Pablo Barceló, Meghyn Bienvenu, Diego Calvanese, Claire David, Richard Hull, Eyke Hüllermeier, Benny Kimelfeld, Leonid Libkin, Wim Martens, Tova Milo, Filip Murlak, Frank Neven, Magdalena Ortiz, Thomas Schwentick, Julia Stoyanovich, Jianwen Su, Dan Suciu, Victor Vianu, and Ke Yi. Research directions for principles of data management (dagstuhl perspectives workshop 16151). *Dagstuhl Manifestos*, 7(1):1–29, 2018.
- [93] Benny Kimelfeld. Technical perspective: Optimizing tree patterns for querying graph- and tree-structured data. *SIGMOD Record*, 46(1):14, 2017.
- [94] Benny Kimelfeld. Extending datalog intelligence. In *RR*, volume 9209 of *Lecture Notes in Computer Science*, pages 1–10. Springer, 2015.
- [95] Ronald Fagin, Benny Kimelfeld, Frederick Reiss, and Stijn Vansummeren. A relational framework for information extraction. *SIGMOD Record*, 44(4):5–16, December 2015.



- [96] Benny Kimelfeld. Database principles in information extraction. In *PODS*, pages 156–163. ACM, 2014.
- [97] Oktie Hassanzadeh, Anastasios Kementsietsidis, Benny Kimelfeld, Rajasekar Krishnamurthy, Fatma Ozcan, and Ippokratis Pandis. Next generation data analytics at IBM Research. *PVLDB*, 6(11):1174–1175, 2013.
- [98] Benny Kimelfeld and Yehoshua Sagiv. Modeling and querying probabilistic XML data. *SIGMOD Record*, 33(4-5):335–359, 2008.