Curriculum Vitae   Oliver Kennedy

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Buffalo, NY 14260

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Education

- *PhD,* Cornell University, Ithaca, NY   2011
  Department of Computer Science
  Thesis: *"Watch out for... What?: Monitoring and Uncertainty in Scientific Computing"*
  Advisor: Christoph Koch

- *MS,* Cornell University, Ithaca, NY   2008
  Department of Computer Science

- *BS (with Honors),* New York University, New York, NY   2005
  Department of Computer Science

- *BS,* Stevens Institute of Technology, Hoboken, NJ   2005
  Department of Computer Engineering

Employment History

- Assistant Professor, Dept. of Comp. Sci. & Eng., SUNY Buffalo   Sept. 2012 – present

- Postdoctoral Fellow, D.A.T.A. Lab, EPFL, Switzerland   June 2011 – Aug. 2012

- Intern, Microsoft Research, Redmond, WA   May 2010 – Aug. 2010

- Intern, Yahoo! Labs, Sunnyvale CA   May 2009 – Aug. 2009

- Teaching/Research Assistant, Cornell University   Sept. 2005 – May 2011

- Programmer, Humanities Computing Group, New York University   Sept. 2003 – Aug. 2005

- Programmer, Parallel and Dist. Sys. Group, New York University   Jan. 2001 – May 2003

Honors

- The pVLDB 2012 paper titled "DBToaster: Higher-order Delta Processing for Dynamic, Frequently Fresh Views" was accepted to the "Best of VLDB 2012" issue of the VLDB Journal

Professional Activities

Reviewer / Program Comittee Member

- Journal: The VLDB Journal (VLDBJ)   2013
- Journal: IEEE Transactions on Knowledge and Data Engineering (TKDE)   2013 – 2014
- Journal: ACM Transactions on Database Systems (TODS)   2015
- Journal: Computer Science Education (CSE)   2015
- Workshop: The VLDB PhD Workshop (VLDB-PhD)   2013
- Demo: VLDB Demo Track (VLDB-Demo)   2016
- Journal: Proceedings of the International Conference on Very Large Databases (Hybrid Journal/Conference) (pVLDB)   2017
- Conference: The ACM SIGMOD/PODS Conference (SIGMOD)   2015 – 2017
- Workshop: Provenance Week (PWEEK)   2016
- Workshop: Workshop on Human-In-the-Loop Data Analytics (HILDA)   2016

Service

- WebDB Session Chair   2013
- NSF Panel Member   2014 – 2015
- SIGMOD Reproducability Committee   2015

Professional Memberships

- ACM   2012 – present
- ACM-SIGMOD   2010 – present
- ACM-Computer Science Teachers Assoc.   2012 – present
    - WNY Chapter Secretary   Sept. 2013 – Sept. 2015
- IEEE   2009 – present

Volunteer Work

- LIBERTY Partnerships   2013 – present
    - Summer Mentor   2013 – 2014
    - 'I Can' Program Volunteer   2015
- Coder Dojo Mentor   2013 – 2014
- Science is Elementary Class Leader   2014 – 2016

Departmental Service

- Dept. of Comp. Sci. and Eng., University at Buffalo, SUNY

  - Graduate Admissions Committee   2012 – present
  - Graduate Advisory Board   2012 – present
  - Faculty Search Committee   2012 – 2014
  - Colloquium Committee   2012 – 2014
    * Chair   2014
  - Grievances Committee   2015 – present
  - Undergraduate Curriculum Development Subcommittee   2015 – present

Invited Talks

- *NYU* — Embracing Uncertainty with Mimir   May 2016

- *HPE/Vertica* — Embracing Uncertainty with Mimir   Mar. 2016

- *Buffalo District Board of Education* — LEGO NXT Professional Development   Jan. 2015

- *Ohio State Computer Science Colloquium* — PocketData: What's in your pocket?   Oct. 2015

- *Oracle* — Just-In-Time Data Structures   Jan. 2015

- *Pivotal* — Just-In-Time Data Structures   Jan. 2015

- *Snowflake Computing Inc.* — Just-In-Time Data Structures   Jan. 2015

- *Western New York CSTA Fall Conference* — Queries with Twitter Tutorial   Oct. 2014

- *Buffalo Database Seminar Meetup* — Everything I Need to Know I Learned From PL   Sept. 2014

- *Google CS4HS, ACM-CSTA, and Buffalo State* — Mobilize Prime Workshop (with Lukasz Ziarek, Sarbani Banerjee)   March. 2014

- *Western New York CSTA Professional Development Workshops* — SQL Tutorial   Jan. 2014

- *Buffalo Database Seminar Meetup* — Emerging Trends in Database Research   Jan. 2014

- *Western New York CSTA 2013 CS4HS Workshop* — Python Workshop (with Lukasz Ziarek, Sarbani Banerjee)   Jun. 2013

- *Cornell University Database Colloquium* — Laasie: The Log as a Service Infrastructure   Feb. 2013

- *Western New York CSTA 2012 Fall Conference* — Python Workshop (with Lukasz Ziarek, Sarbani Banerjee)   Oct. 2012

Courses

- Department of Computer Science and Engineering, SUNY Buffalo

  - `CSE 562` : Graduate Database Systems (planned)   Spring 2017
  - `CSE 662` : Languages and Runtimes for Big Data (planned)   Fall 2016
  - `CSE 462` : Undergraduate Database Systems   Spring 2016
  - `CSE 662` : Languages and Runtimes for Big Data — 29 students   Fall 2015
  - `CSE 562` : Graduate Database Systems — 79 students   Spring 2015
  - `CSE 704` : Databases, Programming Languages and Datastructures — 21 students   Fall 2014
  - `CSE 562` : Graduate Database Systems — 148 students   Spring 2014
  - `CSE 704` : Streaming, Incremental and Online Data Processing — 18 students   Fall 2013
  - `CSE 562` : Graduate Database Systems — 101 students   Spring 2013
  - `CSE 704` : Web-Scale Data Management Systems Seminar — 15 students   Fall 2012

- School of Computer and Communication Sciences, EPFL, Switzerland

  - `CS-422` : Advanced Databases (as Teaching Assistant)   Spring 2011

- Department of Computer Science, Cornell University

  - `CS 4410` : Operating Systems (as Practicum Instructor)   Fall 2008
  - `CS 414` : Operating Systems (as Practicum Instructor)   Spring 2006
  - `CS 414` : Operating Systems (as Practicum Instructor)   Fall 2006

Grant Support

Pending Applications (3)

Title	:	CIF21 DIBBs: EI: Vizier, Streamlined Data Curation
Agency	:	NSF: ACI: DIBBS
Role	:	PI
Amount	:	$2,725,699
Effort	:	33%
Co-PIs	:	Boris Glavic, Juliana Freire

Title	:	CI-P: Supporting Pocket Scale Data Management Research
Agency	:	NSF: CISE: IIS: CRI
Role	:	PI
Amount	:	$100,000
Effort	:	33%

Title	:	III: Small: Just in Time Datastructures
Agency	:	NSF: CISE: IIS: III
Role	:	PI
Amount	:	$494,274
Effort	:	50%

Awarded Grants (2)

Title	:	Curating Uncertainty and Reliable Exploitation (CURE)
Agency	:	The US Naval Postgraduate School
Role	:	Co-I
Amount	:	$134,139
Effort	:	50%
Co-PI	:	Moises Sudit

Title	:	TWC: Medium: Collaborative: Data is Social: Exploiting Data Relationships to Detect Insider Attacks
Agency	:	NSF: CISE: SaTC
Role	:	PI
Amount	:	$975,999 (Total Across Collaboration: $1,215,973)
Effort	:	25%
Co-PIs	:	Hung Ngo, Shambhu Upadhyaya, Varun Chandola
Peer Org.	:	University of Michigan Ann Arbor ($239,974)
Supplements	:	NSF-REU (amount included in total above)

Gifts (3)

Title	:	Intuitive Data Interpretation
Agency	:	Oracle University Relations
Role	:	PI
Amount	:	$89,187
Effort	:	100%

Title	:	Expressing Uncertainty Using the maybe System
Agency	:	Google Research Awards
Role	:	Co-PI
Amount	:	$38,656
Effort	:	33%
Co-PIs	:	Geoffrey Challen, Lukasz Ziarek

Title	:	Intuitive Data Interpretation
Agency	:	Oracle University Relations
Role	:	PI
Amount	:	$90,455
Effort	:	100%

Completed (1)

Title	:	Intuitive Data Interpretation
Agency	:	Oracle University Relations
Role	:	PI
Amount	:	$88,000
Effort	:	50%
Co-PI	:	Jan Chomicki

Publications and Artifacts

Journal Publications (3)

- "Lenses: An On-Demand Approach to ETL" (Y. Yang, N. Meneghetti, R. Fehling, Z. H. Liu, **O. Kennedy**)— *Proceedings of the International Conference on Very Large Databases (Hybrid Journal/Conference) (pVLDB) 2015,* 12 pages, acceptance rate 21.3%

- "DBToaster: Higher-order Delta Processing for Dynamic, Frequently Fresh Views" (C. Koch, Y. Ahmad, **O. Kennedy**, M. Nicolic, A. Nötzli, D. Lupei, A. Shaikhana; *Authors listed in descending order of seniority*)— *The VLDB Journal (VLDBJ) 2014 (Volume 23, Number 2; Special issue on the best papers of VLDB 2012),* 25 pages, acceptance rate not available

- "DBToaster: Higher-order Delta Processing for Dynamic, Frequently Fresh Views" (Y. Ahmad, **O. Kennedy**, C. Koch, M. Nicolic)— *Proceedings of the International Conference on Very Large Databases (Hybrid Journal/Conference) (pVLDB) 2012,* 12 pages, acceptance rate 20.3%

Conference Publications (9)

- "Just in Time Datastructures" (**O. Kennedy**, L. Ziarek)— *The Conference on Innovative Data Systems Research (CIDR)* 2015, 10 pages, acceptance rate unknown (less than 30% in previous years)

- "PigOut: Making Multiple Hadoop Clusters Work Together" (K. Jeon, S. Chandrashekhara, F. Shen, S. Mehra, **O. Kennedy**, S. Y. Ko; *Authors listed students first, then faculty*)— *The IEEE International Conference on Big Data (IEEE BigData)* 2014, 9 pages, acceptance rate 18.6%

- "Inventory Allocation for Online Graphical Display Advertising Using Multi-Objective Optimization" (J. Yang, E. Vee, S. Vassilvitskii, J. Tomlin, J. Shanmugasundaram, T. Anastasakos, **O. Kennedy**)— *The International Conference on Operations Research and Enterprise Systems (ICORES)* 2012, 12 pages, acceptance rate not available

- "Jigsaw: Efficient optimization over uncertain enterprise data" (**O. Kennedy**, S. Nath)— *The ACM SIGMOD/PODS Conference (SIGMOD)* 2011, 12 pages, acceptance rate 23.2%

- "DBToaster: Agile Views for a Dynamic Data Management System" (**O. Kennedy**, Y. Ahmad, C. Koch)— *The Conference on Innovative Data Systems Research (CIDR)* 2011, 12 pages, acceptance rate unknown (less than 30% in previous years)

- "PIP: A Database System for Great and Small Expectations" (**O. Kennedy**, C. Koch)— *The International Conference on Data Engineering (ICDE)* 2010, 12 pages, acceptance rate 21.0%

- "Dynamic approaches to in-network aggregation" (**O. Kennedy**, C. Koch, A. Demers)— *The International Conference on Data Engineering (ICDE)* 2009, 4 pages, acceptance rate 17.0%

- "The Face of Meaning" (G. Shawver, **O. Kennedy**)— *The Joint International Conference of the Association for Computers and the Humanities and the Association for Literary and Linguistic Computing (ACH/ALLH)* 2005, 6 pages, acceptance rate not available

- "Second language comprehension in an online multimedia environment: Integrating theory and practice." (E. Lage-Otero, **O. Kennedy**)— *The World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education (E-Learn)* 2004, 2 pages, acceptance rate not available

Workshop Publications (7)

- "The Exception That Improves The Rule" (J. Freire, B. Glavic, **O. Kennedy**, H. Mueller; *Authors listed in alphabetical order*)— *Workshop on Human-In-the-Loop Data Analytics (HILDA)* 2016, 6 pages, acceptance rate 50.0%

- "Provenance-aware Versioned Dataworkspaces" (X. Niu, B. Arab, D. Gawlick, Z. H. Liu, V. Krishnaswamy, **O. Kennedy**, B. Glavic)— *USENIX Workshop on Theory and Practice of Provenance (TaPP)* 2016, 6 pages, acceptance rate not available

- "Ettu: Analyzing Query Intents in Corporate Databases" (G. Kul, D. T. Luong, T. Xie, P. Coonan, V. Chandola, **O. Kennedy**, S. Upadhyaya)— *Workshop on Empirical Research Methods in Information Security (ERMIS)* 2016, 4 pages, acceptance rate not available

- "Pocket Data: The Need for TPC-MOBILE" (**O. Kennedy**, J. A. Ajay, G. Challen, L. Ziarek)— *The TPC Technology Conference on Performance Evaluation & Benchmarking (TPC-TC)* 2015, 16 pages, acceptance rate not available

- "maybe We Should Enable More Uncertain Mobile App Programming" (G. Challen, J. A. Ajay, N. DiRienzo, **O. Kennedy**, A. Maiti, A. Nandugudi, S. Shantharam, J. Shi, G. P.

Srinivasa, L. Ziarek; *Authors listed in alphabetical order*)— *The ACM Workshop on Mobile Computing Systems and Applications (HotMobile)* 2015, 6 pages, acceptance rate 28.75%

- "Detecting the Temporal Context of Queries" (**O. Kennedy**, Y. Yang, J. Chomicki, R. Fehling, Z. H. Liu, D. Gawlick; *Authors listed UB first, then Oracle*)— *Enabling Real-Time Business Intelligence (BIRTE)* 2014, 17 pages, acceptance rate unknown; average rate approximately 45.0%

- "Monadic Logs for Collaborative Web Applications" (S. Agarwal, D. Bellinger, **O. Kennedy**, A. Upadhyay, L. Ziarek; *Authors listed in alphabetical order*)— *The International Workshop on the Web and Databases (WebDB)* 2013, 6 pages, acceptance rate 25.0%

Technical Reports (5)

- "Mimir: Bringing CTables into Practice" (A. Nandi, Y. Yang, **O. Kennedy**, B. Glavic, R. Fehling, Z. H. Liu, D. Gawlick)— *The ArXiv (ArXiv),* 12 pages

- "Bar_{QL}: Collaborating Through Change" (**O. Kennedy**, L. Ziarek)— *SUNY Buffalo Computer Science & Engineering Report (UB CSE) #2013-03,* 10 pages

- "Bar_{QL}: Collaborating through Change" (**O. Kennedy**, L. Ziarek)— *The ArXiv (ArXiv),* 9 pages

- "Inventory Allocation for Online Graphical Display Advertising" (J. Yang, E. Vee, S. Vassilvitskii, J. Tomlin, J. Shanmugasundaram, **O. Kennedy**)— *The ArXiv (ArXiv),* 25 pages

- "Dynamic approaches to in-network aggregation" (**O. Kennedy**, C. Koch, A. Demers)— *The ArXiv (ArXiv),* 11 pages

Patents (2)

- "Efficient Optimization over Uncertain Data" (S. Nath, S. Lee, S. Smyl, C. Loboz, **O. Kennedy**)— USA Patent #8,650,180

- "System for Display Advertising Optimization Using Click or Conversion Performance" (**O. Kennedy**, T. Anastasakos, J. Mao, E. Vee, J. Shanmugasundaram, S. Vassilvitskii, J. Yang, J. Tomlin)— USA Patent #8,650,180

Artifacts (4)

- **DBToaster** (software)
  A tool that dynamically compiles database engines optimized for any given query workload.
  http://www.dbtoaster.org
  First released May 2012
  As of December 10, 2014, DBToaster had 4191 unique website visitors and 1032 unique downloads

- **Just-in-Time Data Structures** (software)
  An index structure that dynamically adapts to variable workloads.

`http://github.com/UBOdin/jitd`
First released July 2014

- **Mimir** (software)
  A probabilistic overlay for database systems
  `http://mimirdb.info`
  First released January 2015

- **PigOut** (software)
  A multi-cluster runtime for Pig Latin
  `http://pigout.cse.buffalo.edu`
  First released October 2014