

# NEIL CONWAY

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## Education

- **University of California, Berkeley**—Berkeley, CA  
*Ph. D., Computer Science: September 2008–present*
  - Advisor: Professor Joseph M. Hellerstein. Member of the Database Research Group.
  - Research: distributed systems, large-scale data management, logic programming.
- **Queen’s University**—Kingston, Ontario  
*B. Sc. (Hons.), major in Computer Science: September 2002–May 2007*
  - Cumulative average: 88.9%. Cumulative average in Computer Science: 92.9%.

## Selected Awards

- 2010: Facebook PhD Fellowship Finalist
- 2009: Best Student Paper, ICDE 2010
- 2009: Qualcomm Innovation Fellowship Finalist
- 2009: SOSP Student Scholarship
- 2009: NSERC PGS-M Graduate Fellowship
- 2008: Frank and Margaret Lucas Fellowship, UC Berkeley

## Professional Experience

- **UC Berkeley**—Berkeley, CA  
*Graduate Student Researcher* *May 2009–August 2009*
  - Designed and implemented C4, a high-performance dataflow engine designed for parallel and distributed computing.
  - Contributed to an implementation of the Paxos consensus protocol using Overlog, a declarative language for distributed programming.
- **Truviso**—Foster City, CA  
*Senior Software Engineer* *May 2006–August 2006, May 2007–July 2008*
  - As the first technical employee, played a key role in the design and implementation of Truviso’s flagship product, a data stream processing system based on PostgreSQL.
  - Implemented the core continuous query processing architecture, as well as numerous features including shared query optimization, stream-table joins, snapshot isolation for continuous queries, archived streams, data ingress, and stream-related DDL.
- **PostgreSQL Global Development Group**  
*Major Developer* *2002–Present*
  - As a CVS committer since 2002, developed numerous PostgreSQL features, fixed bugs, and reviewed countless patches. 300+ CVS commits.

- **Fujitsu**—Sydney, Australia  
*Software Engineer* *September 2004–August 2005*
  - Full-time work on PostgreSQL internals. Implemented many PostgreSQL features, and advised customers on database deployment, configuration, and performance tuning.
  - Developed a prototype multi-master synchronous database replication system.
- **Microsoft**—Redmond, WA  
*Software Design Engineer (Intern)* *June 2004–August 2004*
  - Project BigTop, a web services incubation team.
  - Wrote a user-level thread scheduler for the .NET CLR, and investigated techniques for efficient OS support for millions of concurrent, lightweight threads.
- **Microsoft**—Redmond, WA  
*Software Design Engineer (Intern)* *May 2003–August 2003*
  - Core File Services group, working on an asynchronous filesystem replication service.
  - Developed a specification for consistent replication of filesystem transactions.
  - Developed a tool for automatic replica configuration using P2P networking.
  - Wrote a custom C++ memory allocator to improve simulator performance by 1000%.
- **Red Hat**—Toronto, Ontario  
*Software Engineer (Intern)* *June 2002–August 2002*
  - Worked on PostgreSQL internals. Implemented prepared statements, set-returning PL/PgSQL functions, and developed the pg\_locks system view.

## Publications

- P. Alvaro, T. Condie, N. Conway, K. Elmeleegy, J. M. Hellerstein, R. Sears. *BOOM Analytics: Exploring Data-Centric, Declarative Programming for the Cloud*. EuroSys 2010.
- T. Condie, N. Conway, P. Alvaro, J. M. Hellerstein, K. Elmeleegy, R. Sears. *MapReduce Online*. NSDI 2010.
- K. Chen, H. Chen, N. Conway, J. M. Hellerstein, T. S. Parikh. *Usher: Improving Data Quality with Dynamic Forms*. ICDE 2010. **Best Student Paper**.
- P. Alvaro, T. Condie, N. Conway, J. M. Hellerstein, R. C. Sears. *I Do Declare: Consensus in a Logic Language*. NetDB 2009.
- M. J. Franklin, S. Krishnamurthy, N. Conway, A. Li, A. Russakovsky, N. Thombre. *Continuous Analytics: Rethinking Query Processing in a Network-Effect World*. CIDR 2009.

## Technical Reports

- P. Alvaro, W. R. Marczak, N. Conway, J. M. Hellerstein, D. Maier, and R. C. Sears. *Dedalus: Datalog in Time and Space*. UCB Tech. Rep. No. UCB/EECS-2009-173.
- N. Conway. *Transactions and Data Stream Processing*. B. Sc. thesis, Queen's University. 2007.

## Demos and Posters

- T. Condie, N. Conway, P. Alvaro, J. M. Hellerstein, K. Elmeleegy, R. Sears. *Online Aggregation and Continuous Query support in MapReduce*. Demo, SIGMOD 2010.
- K. Chen, H. Chen, N. Conway, H. Dolan, J. M. Hellerstein, T. S. Parikh. *Improving Data Quality with Dynamic Forms*. Poster, ICTD 2009.

## Patent Applications

- S. Krishnamurthy, N. Thombre, N. Conway, W. H. Li. *Systems and Methods for Managing Queries*. USPTO Application No. 12/398,959. Filed March 5, 2009.
- S. Krishnamurthy, N. Thombre, N. Conway, W. H. Li, M. Hoyer. *Addition and Processing of Continuous SQL Queries in a Streaming Relational Database System*. USPTO No. 12/398,944. Filed March 5, 2009.

## Talks

- 2010, EuroSys: “BOOM Analytics: Exploring Data-Centric, Declarative Programming for the Cloud”
- 2010, Datalog 2.0 Workshop: “Cloud Programming: From Doom and Gloom to BOOM and Bloom”
- 2009, IBM Hadoop SIG: “MapReduce Online”
- 2009, Stanford Info Lab: “BOOM: Data-Centric Programming For The Data Center”
- 2007, PostgreSQL West: “Query Execution Techniques in PostgreSQL”
- 2007, PgCon: “Data Stream Management Systems”
- 2007, PgCon: “Introduction to Hacking PostgreSQL” (3 hour tutorial)
- 2006, PostgreSQL 10th Anniversary Summit: “Introduction to Hacking PostgreSQL”
- 2005, Linux.conf.au: “Inside the PostgreSQL Query Optimizer”

## Press Coverage

- MIT Technology Review, *Less Clumsy Code for the Cloud*. Erica Naone, December 16, 2009.
- DBMS Musings, *Analysis of the “MapReduce Online” paper*. Daniel Abadi, October 22, 2009.
- O’Reilly Radar, *Pipelining and Real-time Analytics with MapReduce Online*. Ben Lorica, October 20, 2009.