Jacob Nelson

Computer Science and Engineering
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EMPLOYMENT

- **Computer Science and Engineering, University of Washington**, Seattle, WA.
  Postdoctoral Research Associate, January 2015–present.
  Research Assistant, September 2006–December 2014.
- **Google**, Mountain View, CA., Seattle, WA.
  Intern, Summer 2007, Summer 2008, June 2010–September 2011.
- **Cray**, Seattle, WA.
  Intern, Summer 2009.
- **Amazon**, Seattle, WA.
  Software Development Engineer, 2005–2006.
- **XKL**, Redmond, WA.
  Member Technical Staff, Hardware, 2001–2004.
- **Pacific Northwest National Laboratory**, Richland, WA.
  Intern, Summer 1999.

EDUCATION

- **University of Washington**, Seattle, WA.
  Ph.D. in Computer Science, December 2014.
  Thesis: *Latency-Tolerant Distributed Shared Memory For Data-Intensive Applications.*
  M.S. in Computer Science, June 2009.
- **Pacific Lutheran University**, Tacoma, WA.
  B.S. in Computer Engineering and Math, May 2000.

SELECTED PUBLICATIONS

1. Jacob Nelson, Brandon Holt, Brandon Myers, Preston Briggs, Luis Ceze, Simon Kahan, Mark Oskin. Latency-Tolerant Software Distributed Shared Memory. To appear in USENIX Annual Technical Conference, July 2015.
2. Thierry Moreau, Mark Wyse, Jacob Nelson, Adrian Sampson, Hadi Esmaeilzadeh, Luis Ceze, Mark Oskin. SNNAP: Approximate Computing on Programmable SoCs via Neural Acceleration. HPCA 2015.
3. Brandon Myers, Dan Halperin, Jacob Nelson, Mark Oskin, and Bill Howe. Radish: Compiling Efficient Query Plans for Distributed Shared Memory. UW CSE Tech Report 14-10-01, 2014.
4. Jacob Nelson, Brandon Holt, Brandon Myers, Preston Briggs, Luis Ceze, Simon Kahan, Mark Oskin. Grappa: A Latency-Tolerant Runtime for Large-Scale Irregular Applications. International Workshop on Rack-Scale Computing (WRSC w/EuroSys), April 2014.
5. Adrian Sampson, Jacob Nelson, Karin Strauss, Luis Ceze. Approximate Storage in Solid-State Memories. MICRO 2013. Selected to appear as an expanded version in ACM TOCS.

6. Brandon Holt, Jacob Nelson, Brandon Myers, Preston Briggs, Luis Ceze, Simon Kahan, Mark Oskin. Flat Combining Synchronized Global Data Structures. International Conference on PGAS Programming Models (PGAS), October 2013.
7. Jacob Nelson, Brandon Holt, Brandon Myers, Preston Briggs, Luis Ceze, Simon Kahan, Mark Oskin. Pomace: A Grappa for Non-Volatile Memory. Non-Volatile Memories Workshop, March 2013.
8. Jacob Nelson, Brandon Myers, A. H. Hunter, Preston Briggs, Luis Ceze, Carl Ebeling, Dan Grossman, Simon Kahan, Mark Oskin. Crunching Large Graphs With Commodity Processors. HOTPAR 2011.
9. Jacob Nelson, Adrian Sampson, and Luis Ceze. Dense Approximate Storage in Phase-Change Memory. Ideas and Perspectives session, ASPLOS 2011.
10. Joseph Devietti, Jacob Nelson, Tom Bergan, Luis Ceze, Dan Grossman. RCDC: A Relaxed Consistency Deterministic Computer. ASPLOS 2011.
11. Jacob Nelson, Luis Ceze. Dynamic Concurrency Discovery for Very Large Windows of Execution. PESPMA 2009.

AWARDS AND HONORS

- 2011 HPC Advisory Council University Award
- 2008 Bob Bandes Memorial Award for Excellence in Teaching

PATENTS

- Luis Ceze, Jacob Nelson, Brandon Holt, Brandon Myers, Simon Kahan, Mark Oskin. Methods and Systems for Scalable Computing on Commodity Hardware for Irregular Applications. Patent filed March 2013.
- Luis Ceze, Tom Bergan, Joseph Devietti, Dan Grossman, Jacob Nelson. Systems and Methods for Providing Deterministic Execution. Patent filed March 2012.

TEACHING

- TA for Machine Organization and Assembly Language. CSE, UW, various quarters 2008–2010 with Luis Ceze, Larry Snyder, Mark Oskin, Ruth Anderson.
- TA for Computer Design and Organization. CSE, UW, Spring 2007 with Susan Eggers.
- TA for Advanced Logic Design. CSE, UW, Spring 2006 and 2007 with Carl Ebeling, Mark Oskin.
- TA for Principles of Digital Systems Design. CSE, UW, Winter 2007 with Carl Ebeling.
- Co-taught Microprocessors with Professor Tosh Kakar at Pacific Lutheran University, Spring 2006.

SERVICE

- External review committee member for IEEE CAL 2015, POPL 2015, HPCA 2013, PLDI 2012
- Reviewer for IEEE Computer Special Issue on Irregular Applications, 2015.
- Reviewer for Journal of Parallel and Distributed Computing Special Issue on Architectures and Algorithms for Irregular Applications, 2014.
- Program committee member, Workshop on Irregular Applications: Architectures and Algorithms, 2012.
- Pacific Lutheran University CSCE Industrial Advisory Board member, 2006–present.
- Member of ACM, IEEE, USENIX.

STATUS

US Citizen.