Jacob Nelson

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EMPLOYMENT

◇ **Computer Science and Engineering, University of Washington**, Seattle, WA.
Research Assistant, September 2006–December 2014.

◇ **Google**, Mountain View, CA.
Intern, Summer 2007, Summer 2008, June 2010–January 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 Science and Math, May 2000.

PUBLICATIONS

1. Thierry Moreau, Mark Wyse, Jacob Nelson, Adrian Sampson, Hadi Esmaeilzadeh, Luis Ceze, Mark Oskin. SNNAP: Approximate Computing on Programmable SoCs via Neural Acceleration. To appear in HPCA 2015.

2. 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.

3. Jacob Nelson, Brandon Holt, Brandon Myers, Preston Briggs, Luis Ceze, Simon Kahan, Mark Oskin. Latency-Tolerant Software Distributed Shared Memory. UW CSE Tech Report 14-05-03, 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
- **1999** Winning paper in COMAP's international Mathematical Contest in Modeling

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

- Spring 2010, TA for CSE378: Machine Organization and Assembly Language, CSE, UW.
- Fall 2009, TA for CSE378: Machine Organization and Assembly Language, CSE, UW.
- Winter 2009, TA for CSE378: Machine Organization and Assembly Language, CSE, UW.
- Fall 2008, TA for CSE378: Machine Organization and Assembly Language, CSE, UW.
- Spring 2008, TA for CSE378: Machine Organization and Assembly Language, CSE, UW.
- Winter 2008, TA for CSE378: Machine Organization and Assembly Language, CSE, UW.
- Fall 2007, TA for CSE467: Advanced Logic Design, CSE, UW.
- Spring 2007, TA for CSE471: Computer Design and Organization, CSE, UW.
- Winter 2007, TA for CSE567: Principles of Digital Systems Design, CSE, UW.
- Fall 2006, TA for CSE467: Advanced Logic Design, CSE, UW.
- Spring 2006, CSCE480: Microprocessors, co-taught with Professor Tosh Kakar, Pacific Lutheran University.

SERVICE

- External review committee member, POPL 2015.
- Reviewer for Journal of Parallel and Distributed Computing Special Issue on Architectures and Algorithms for Irregular Applications, 2014.

⬦ External review committee member, HPCA 2013.

⬦ Program committee member, TinyTOCS 2012.

⬦ External review committee member, PLDI 2012.

⬦ Program committee member, Workshop on Irregular Applications: Architectures and Algorithms, 2012.

⬦ Graduate and Professional Student Senate representative, 2008.

⬦ UW CSE Prospective Student Committee, 2007.

⬦ Pacific Lutheran University CSCE Industrial Advisory Board member, 2006–present.

⬦ Member of ACM, IEEE, USENIX.

STATUS

US Citizen.