

# Curriculum Vitae

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**Michael A. Sevilla**

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## EMPLOYMENT HISTORY

- 2012-2018 **Graduate Student Researcher (GSR)**, University of California, Santa Cruz, CA
- 2017 **Intern**, Ultrascale Research Center, Los Alamos National Laboratory, Los Alamos, NM
- 2013-2016 **Technical Staff**, Storage Division CTO, Hewlett Packard Enterprise, Fremont, CA
- 2011-2012 **Teaching Assistant (TA)**, University of California, Santa Cruz, CA
- 2010-2011 **Intern**, Hardware Testing, Cisco Systems, Irvine, CA
- 2005 **Intern**, Firmware Testing, Hewlett-Packard, San Diego, CA

## EDUCATION

- 2018 Ph.D., Computer Science, University of California, Santa Cruz (advisor: Carlos Maltzahn)  
Thesis: *Scalable, Global Namespaces with Programmable Storage*
- 2014 M.S., Computer Science, University of California, Santa Cruz (advisor: Scott A. Brandt)  
Thesis: *A Framework for an In-depth Comparison of Scale-up and Scale-out*
- 2011 B.S., Computer Science/Engr., University of California, Irvine (advisor: Ian G. Harris)

## AWARDS & HONORS

- 2015-2018 **Research Award**, Center for Research in Open Source Software (CROSS)
- 2017 **Travel Award**, European Systems Conference (EuroSys '17)
- 2013 **Travel Award**, Symposium on Cloud Computing (SoCC '13)
- 2011 **Cum Laude**, University of California, Irvine
- 2011 **Outstanding Contribution to Research**, University of California, Irvine
- 2010 **Research Award**, Undergraduate Research Opportunities Program

## PUBLICATIONS

### Refereed Conference & Workshop Papers

- C11. **Michael A. Sevilla**, Reza Nasirigerdeh, Carlos Maltzahn, Jeff LeFevre, Noah Watkins, Peter Alvaro, Margaret Lawson, Jay Lofstead, Jim Pivarski, “Tintenfisch: File System Namespace Schemas and Generators”, *Proceedings of the 10th USENIX Workshop on Hot Topics in Storage and File Systems co-located with the USENIX Annual Technical Conference (HotStorage '18)*, Boston, MA, July 2018. (36.7% acceptance rate)
- C10. **Michael A. Sevilla**, Carlos Maltzahn, “Popper Pitfalls: Experiences Following a Reproducibility Convention”, *Proceedings of the 1st ACM/IEEE International Workshop on Practical Reproducible Evaluation of Computer Systems co-located with the 27th ACM International Symposium on High Performance Parallel and Distributed Computing (P-RECS '18)*, Tempe, AZ, June 2018.

- Michael A. Sevilla**, Ivo Jimenez, Noah Watkins, Jeff LeFevre, Peter Alvaro, Shel Finkelstein, Patrick Donnelly, and Carlos Maltzahn, “Cudele: An API and Framework for Programmable Consistency and Durability in a Global Namespace”, *Proceedings of the 32nd IEEE International Parallel and Distributed Processing Symposium (IPDPS '18)*, Vancouver, BC, Canada, May 2018. (24.5% acceptance rate)
- Michael A. Sevilla**, Carlos Maltzahn, Peter Alvaro, Reza Nasirigerdeh, Bradley W. Settlemyer, Danny Perez, David Rich, and Galen M. Shipman, “Programmable Caches with a Data Management Language and Policy Engine”, *Proceedings of the 18th ACM/IEEE International Symposium on Cluster, Cloud and Grid Computing (CCGrid '18)*, Washington DC, May 2018. (20.8% acceptance rate)
- Ivo Jimenez, Noah Watkins, **Michael A. Sevilla**, Jay Lofstead, and Carlos Maltzahn, “quiho: Automated Performance Regression Testing Using Inferred Resource Utilization Profiles”, *Proceedings of the 9th ACM/SPEC International Conference on Performance Engineering (ICPE '18)*, Berlin, Germany, April 2018.
- Noah Watkins, **Michael A. Sevilla**, Ivo Jimenez, Kathryn Dahlgren, Peter Alvaro, Shel Finkelstein, and Carlos Maltzahn, “DeclStore: Layering is for the Faint of Heart”, *Proceedings of the 9th USENIX Workshop on Hot Topics in Storage and File Systems co-located with the USENIX Annual Technical Conference (HotStorage '17)*, Santa Clara, CA, July 2017.
- Ivo Jimenez, **Michael A. Sevilla**, Noah Watkins, Carlos Maltzahn, Jay Lofstead, Kathryn Mohror, Andrea Arpaci-Dusseau and Remzi Arpaci-Dusseau, “The Popper Convention: Making Reproducible Systems Evaluation Practical”, *Proceedings of the 4th International Workshop on Reproducibility in Parallel Computing co-located with the 31st IEEE International Parallel and Distributed Processing Symposium (REPPAR '17)*, Orlando, FL, June 2017.
- Michael A. Sevilla**, Noah Watkins, Ivo Jimenez, Carlos Maltzahn, Peter Alvaro, Shel Finkelstein, and Jeff LeFevre, “Malacology: A Programmable Storage System”, *Proceedings of the 12th European Conference on Computer Systems (EuroSys '17)*, Belgrade, Serbia, April 2017. (20.5% acceptance rate)
- Michael A. Sevilla**, Noah Watkins, Carlos Maltzahn, Ike Nassi, Scott Brandt, Greg Farnum, Sage A. Weil, and Sam Fineberg, “Mantle: A Programmable Metadata Load Balancer for the Ceph File System”, *Proceedings of the 28th ACM/IEEE International Conference for High Performance Computing Networking, Storage, and Analysis (SC '15)*, Austin, TX, November 2015. (22.0% acceptance rate)
- Michael Sevilla**, Ike Nassi, Kleoni Ioannidou, Scott Brandt, and Carlos Maltzahn, “SupMR: Circumventing Disk and Memory Bandwidth Bottlenecks for Scale-up MapReduce”, *Proceedings of the Workshop on Large-Scale Parallel Processing co-located with the 28th IEEE International Parallel and Distributed Processing Symposium (LSPP '14)*, Phoenix, AZ, May 2014.
- Michael Sevilla**, Ike Nassi, Kleoni Ioannidou, Scott Brandt and Carlos Maltzahn, “A Framework for an In-depth Comparison of Scale-up and Scale-out”, *Proceedings of the International Workshop on Data-Intensive Scalable Computing Systems co-located with the 27th ACM/IEEE International Conference for High Performance Computing Networking, Storage, and Analysis (DISCS '13)*, Denver, CO, November 2013.

## Journals

- J1. Ivo Jimenez, **Michael Sevilla**, Noah Watkins, Carlos Maltzahn, Jay Lofstead, Kathryn Mohror, Remzi Arpaci-Dusseau, and Andrea Arpaci-Dusseau, “Standing on the Shoulders of Giants by Managing Scientific Experiments Like Software”, *login: The USENIX Magazine*, Winter 2016.

## Refereed Short Papers

- S2. Noah Watkins, **Michael Sevilla**, Ivo Jimenez, Neha Ojha, Peter Alvaro, Carlos Maltzahn, “Brados: Declarative, Programmable Object Storage”, *Poster Session at the 7th ACM Symposium on Cloud Computing*, Santa Clara, CA, October 2016.
- S1. **Michael Sevilla**, Scott Brandt, Carlos Maltzahn, Ike Nassi, Sam Fineberg, “Exploring Resource Migration using the CephFS Metadata cluster”, *Work-in-Progress and Poster Session at the 12th USENIX Conference on File and Storage Technology*, San Jose, CA, February 2014.

## Technical Reports

- T6. **Michael A. Sevilla**, Reza Nasirigerdeh, Carlos Maltzahn, Jeff LeFevre, Noah Watkins, Peter Alvaro, Margaret Lawson, Jay Lofstead, “Tintenfisch: File System Namespace Schemas And Generators”, *UCSC-SOE-18-08*, April 2018.
- T5. Noah Watkins, **Michael Sevilla**, Ivo Jimenez, Neha Ojha, Peter Alvaro, Carlos Maltzahn, “Brados: Declarative, Programmable Object Storage”, *UCSC-SOE-16-12*, July 2016.
- T4. Ivo Jimenez, **Michael Sevilla**, Noah Watkins, Carlos Maltzahn “Popper: Making Reproducible Systems Performance Evaluation Practical”, *UCSC-SOE-16-10*, May 2016.
- T3. Noah Watkins, **Michael Sevilla**, Carlos Maltzahn, “GassyFS: An In-Memory File System That Embraces Volatility”, *UCSC-SOE-16-08*, April 2016.
- T2. Noah Watkins, **Michael Sevilla**, Carlos Maltzahn, “The Case For Programmable Object Storage Systems”, *UCSC-SOE-15-12*, June 2015.
- T1. **Michael Sevilla**, Rosie Wacha and Scott A. Brandt, “RAID4S-Modthresh: Modifying The Write Selection Algorithm To Classify Medium-Writes As Small-Writes”, *UCSC-SOE-12-10*, July 2012.

## PROFESSIONAL ACTIVITY

### Conceptualization Workshops

- W2. “First Software Sustainability Institute Workshop”, *Conceptualization of an NSF Scientific Software Innovation Institute (S2I2) for Research Software Sustainability in the United States*, **University of California at Berkeley**, Berkeley, CA, April 2018 (contributed whitepaper).
- W1. “HEP Software Foundation Workshop”, *Conceptualization of an NSF Scientific Software Innovation Institute (S2I2) for High Energy Physics*, **University of California at San Diego / San Diego Supercomputer Center**, San Diego, CA, January 2017 (contributed whitepaper).

## Invited Talks

- I9. “Lua in the Ceph Distributed Storage System”, *Lua Workshop 2017*, **Kong HQ**, San Francisco, CA, October 2017 (presented by Noah Watkins).
- I8. “Malacology: A Programmable Storage System”, *Second Annual CROSS Research Symposium*, **UCSC**, Santa Cruz, CA, October 2017.
- I7. “Metadata Load Balancing Policies and Key-Value Stores”, *Second Annual Ultrascale Systems Research Center (USRC) Symposium*, **Los Alamos National Laboratory**, Los Alamos, NM, August 2017.
- I6. “Mantle: A Programmable Metadata Load Balancer for the Ceph File System”, *First Annual CROSS Research Symposium & Eighth UCSC Systems Oktoberfest*, **UCSC**, Santa Cruz, CA, October 2016.
- I5. “Metrics Collection Engine with Open-Source Tools”, *Lunchtime Seminar*, **Hewlett Packard Enterprise**, Andover, MA, September 2016.
- I4. “Mantle: A Programmable Metadata Load Balancer for the Ceph File System”, *Seventh Annual SRL/ISSDM Research Symposium*, **UCSC**, Santa Cruz, CA, October 2015.
- I3. “Dynamic and Injectable Metadata Policies for Load Equalization”, *Sixth Annual SRL/ISSDM Research Symposium*, **UCSC**, Santa Cruz, CA, October 2014.
- I2. “A Framework for an In-Depth Comparison of Scale-up and Scale-out”, *Fifth Annual SRL/ISSDM Research Symposium*, **UCSC**, Santa Cruz, CA, October 2013.
- I1. “Big Data Processing Architecture”, *Fourth Annual SRL/ISSDM Research Symposium*, **UCSC**, Santa Cruz, CA, October 2012.

## Teaching and Mentoring

- T4. **Mentor**, Google Summer of Code, Center for Research in Open Source Software, Summer 2018.
- T3. **Teaching Assistant**, Operating Systems, Undergraduate Level, University of California, Santa Cruz, Spring 2012.
- T2. **Teaching Assistant**, 3D Modeling, Undergraduate Level, University of California, Santa Cruz, Winter 2012.
- T1. **Teaching Assistant**, Introduction to Computer Science, Undergraduate Level, University of California, Santa Cruz, Fall 2011.

## Guest Lectures

- L3. **Guest Lecturer**, Advanced Distributed Systems, Graduate Level, University of California, Santa Cruz, Spring 2018.

- L2. **Guest Lecturer**, Advanced Distributed Systems, Graduate Level, University of California, Santa Cruz, Fall 2016.
- L1. **Guest Lecturer**, Operating Systems, Undergraduate Level, University of California, Santa Cruz, Spring 2012.