

# Ellis Michael

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## Education

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### University of Washington

*Ph.D. Computer Science*

*July 2015–December 2022*

Advisors: Dan Ports & Tom Anderson

### University of Washington

*M.S. Computer Science*

*July 2015–March 2017*

### University of Texas at Austin

*B.S. Computer Science Honors, B.A. Plan II Honors*

*August 2011–May 2015*

Graduated with Highest Honors, GPA: 4.0

## Research Interests

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I am interested in the theory and practice of distributed systems.

## Publications

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### Refereed Articles in Conference Proceedings.....

1. "Hydra: Serialization-Free Network Ordering for Strongly Consistent Distributed Applications."  
Inho Choi, Ellis Michael, Yunfan Li, Dan R. K. Ports, and Jialin Li.  
Proceedings of the 20th USENIX Symposium on Networked Systems Design and Implementation (NSDI '23). Boston, MA, USA. April 2023.
2. "Pegasus: Tolerating Skewed Workloads in Distributed Storage with In-Network Coherence Directories."  
Jialin Li, Jacob Nelson, Ellis Michael, Xin Jin, and Dan R. K. Ports.  
Proceedings of the 14th USENIX Symposium on Operating Systems Design and Implementation (OSDI '20). Banff, Alberta, Canada. November 2020.
3. "On the Use of Model Checking for Remote Instruction."  
Tom Anderson and Ellis Michael.  
ACM SIGCOMM CCR Series on Networking Education. August 2020.
4. "Harmonia: Near-Linear Scalability for Replicated Storage with In-Network Conflict Detection."  
Hang Zhu, Zhihao Bai, Jialin Li, Ellis Michael, Dan R. K. Ports, Ion Stoica, and Xin Jin.  
Proceedings of the 46th International Conference on Very Large Data Bases (VLDB '20). Tokyo, Japan. August 2020.

5. "Teaching Rigorous Distributed Systems With Efficient Model Checking."  
Ellis Michael, Doug Woos, Thomas Anderson, Michael D. Ernst, and Zachary Tatlock.  
Proceedings of the 14th European Conference on Computer Systems (EuroSys '19). Dresden, Germany. March 2019.
6. "Towards Causal Datacenter Networks."  
Ellis Michael and Dan R. K. Ports.  
Proceedings of the 5th Workshop on Principles and Practice of Consistency for Distributed Data (PaPoC '18). Porto, Portugal. April 2018.
7. "Eris: Coordination-Free Consistent Transactions Using In-Network Concurrency Control."  
Jialin Li, Ellis Michael, and Dan R. K. Ports.  
Proceedings of the 26th ACM Symposium on Operating Systems Principles (SOSP '17). Shanghai, China. October 2017.
8. "Recovering Shared Objects Without Stable Storage."  
Ellis Michael, Dan R. K. Ports, Naveen Kr. Sharma, and Adriana Szekeres.  
Proceedings of the 31st International Symposium on Distributed Computing (DISC '17). Vienna, Austria. October 2017.
9. "Just Say NO to Paxos Overhead: Replacing Consensus with Network Ordering."  
Jialin Li, Ellis Michael, Adriana Szekeres, Naveen Kr. Sharma, and Dan R. K. Ports.  
Proceedings of the 12th USENIX Symposium on Operating Systems Design and Implementation (OSDI '16). Savannah, GA, USA. November 2016.

**Technical Reports** .....

1. "Harmonia: Near-Linear Scalability for Replicated Storage with In-Network Conflict Detection."  
Hang Zhu, Zhihao Bai, Jialin Li, Ellis Michael, Dan R. K. Ports, Ion Stoica, and Xin Jin.  
Technical Report 1904.08964, arXiv. April 2019.
2. "Eris: Coordination-Free Consistent Transactions Using In-Network Concurrency Control (Extended Version)."  
Jialin Li, Ellis Michael, and Dan R. K. Ports.  
Technical Report UW-CSE-17-10-01, University of Washington CSE. October 2017.
3. "Recovering Shared Objects Without Stable Storage (Extended Version)."  
Ellis Michael, Dan R. K. Ports, Naveen Kr. Sharma, and Adriana Szekeres.  
Technical Report UW-CSE-17-08-01, University of Washington CSE. August 2017.
4. "Just Say NO to Paxos Overhead: Replacing Consensus with Network Ordering (Extended Version)."  
Jialin Li, Ellis Michael, Adriana Szekeres, Naveen Kr. Sharma, and Dan R. K. Ports.  
Technical Report UW-CSE-16-09-02, University of Washington CSE. September 2016.
5. "Providing Stable Storage for the Diskless Crash-Recovery Failure Model."

Ellis Michael, Dan R. K. Ports, Naveen Kr. Sharma, and Adriana Szekeres.  
Technical Report UW-CSE-16-08-02, University of Washington CSE. August 2016.

## Theses

1. "Scaling Leader-Based Protocols for State Machine Replication."  
Ellis Michael. Supervisor: Lorenzo Alvisi.  
Undergraduate Honors Thesis. University of Texas at Austin. May 2015.

## Work History

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### Google

*Software Engineer*

### Kirkland

*February 2023–Present*

### Google

*Software Engineering Intern*

### Mountain View

*Summer 2013*

- Mentor: Sean Lip
- Developed a full-text search module for Google's Course Builder, a Google App Engine application
- Worked across the application's entire stack in CSS, HTML (with Jinja templating), Javascript, and Python

### IBM

*Software Engineering Intern*

### Austin

*Summer 2012*

- Developed a tool to expedite the integration and build process for the Business Process Management (BPM) group using DB2, TeamCity, RTC, and BPM
- Created RESTful APIs in Java

## Teaching Experience

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### Distributed Systems (CSE 452), University of Washington

*Co-instructor*

*Spring 2019*

### Distributed Systems (CSE 452/M552), University of Washington

*Teaching Assistant*

*Spring 2017*

### Foundations of Computing I (CSE 311), University of Washington

*Tutor*

*Spring 2016, Fall 2016*

### Foundations of Computing II (CSE 312), University of Washington

*Tutor*

*Winter 2016*

### Honors Research Methods (UGS 303), University of Texas at Austin

*Undergraduate Teaching Assistant*

*Fall 2013, Fall 2014*

### Discrete Mathematics (M 325K), University of Texas at Austin

*Grader*

*Spring 2013*

## Honors

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### Awards.....

- UW CSE Industrial Affiliates Madrona Prize Runner-Up, 2016

### Graduate Fellowships.....

- IBM PhD Fellowship, 2019
- NSF Graduate Research Fellowship, 2017
- NSF Graduate Research Fellowship Honorable Mention, 2016
- Jeff Dean - Heidi Hopper Endowed Regental Fellowship, 2015
- Gary Kildall Endowed Fellowship, 2015

### Undergraduate Honors Programs.....

- Dean's Scholars Honors Program
- Turing Scholars Honors Program
- Plan II Honors

### Undergraduate Awards.....

- Dean's Honored Graduate, College of Natural Sciences
- Distinguished College Scholar in the College of Natural Sciences, 2012–2014
- College of Natural Science Book Award — Graduate Distributed Computing, Fall 2013

### Undergraduate Scholarships.....

- Frances Rather Seybold and Frances Randolph Rather Seybold Endowed Presidential Scholarship, 2014
- Eva Stevenson Woods Endowed Presidential Scholarship, 2014
- Michelle K. Brock and Sophia and G.W. Brock Endowed Presidential Scholarship, 2014 and 2013
- Kevin E. Underhill Memorial Endowed Presidential Scholarship, 2014 and 2013
- Chevron Scholar, 2014 and 2012
- Ralph R. Nelson Endowed Presidential Scholarship, 2013
- Bettie Johnson Halsell Endowed Presidential Scholarship in Liberal Arts, 2013
- Renee Wolfe Zelman and Norman Zelman Endowed Scholarship, 2012
- Joe P. Liberty Endowed Scholarship in Plan II, 2012
- National Merit Scholar, 2011

### Undergraduates Supervised

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- Lukas Joswiak

## **Service**

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- OSDI External Reviewer, *2018*
- SIGCOMM External Reviewer, *2020*
- UW CSE Graduate Admissions Committee, *2018–2020*