# Curriculum Vitae


## Peter Alvaro

November 2026

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## EMPLOYMENT HISTORY

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| 2026– | Professor, Computer Science and Engineering Department, University of California, Santa Cruz |
| 2021-2026 | Associate Professor, Computer Science and Engineering Department, University of California, Santa Cruz |
| 2022– | Amazon Scholar, Amazon, Seattle, WA |
| 2018-2022 | Consultant, Ebay, San Jose, CA |
| 2015-2021 | Assistant Professor, Computer Science and Engineering Department, University of California, Santa Cruz |
| 2016 | Consultant, Uber, San Francisco, CA |
| 2015 | Consultant, Netflix, Los Gatos, CA |
| 2008-2014 | Research Assistant, Computer Science Division, University of California at Berkeley |
| 1999-2008 | Senior Software Engineer, Ask.com, Oakland, CA |

## EDUCATION

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| 2015 | Ph. D., University of California at Berkeley, Computer Science (advisor: Joseph M. Hellerstein) Thesis: *Data-centric Programming for Distributed Systems* |
| 2010 | M. S., University of California at Berkeley, Computer Science |
| 1997 | B. A, Middlebury College, English Literature, *magna cum laude* |

## HONORS AND AWARDS

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| 2026 | **Keynote Speaker**, BugBash, Washington, DC, April 2026. |
| 2025 | **Best Paper Award**, SoCC 2025. |
| 2022 | **Meta Research Award** |
| 2021 | **Keynote Speaker**, CodeBEAM, San Jose, CA, November 2021. |
| 2021 | **Distinguished PC Member**, SIGMOD 2021. |
| 2021 | **Keynote Speaker**, PaPoC and LADIS Workshops (Eurosys), Edinburgh, UK, April 2021. |
| 2020 | **Best Presentation Award**, USENIX ATC 2020. |
| 2020 | **UCSC Excellence in Teaching Award** |
| 2020 | **Keynote Speaker**, BuzzConf, Buenos Aires, Argentina, July 2020. |
| 2019 | **Facebook Research Award** |
| 2019 | **Honorable Mention**, UCSC Excellence in Teaching Award. |
| 2017 | **NSF CAREER** Award: "Lineage-driven Fault Injection." |
| 2017 | **Facebook Research Award** |
| 2017 | **Keynote Speaker**, O'Reilly Velocity, San Jose, CA, 2017. |
| 2016 | **Keynote Speaker**, Reactive Summit, Austin, TX, 2016. |
| 2016 | **Keynote Speaker**, Qcon London 2016. |
| 2015 | **Keynote Speaker**, Strange Loop, Saint Louis, MO, September 2015. |
| 2014 | **Keynote Speaker**, Ricon, Las Vegas, NV, October 2014. |

2010 **Graduate Research Fellow**, National Science Foundation
2009 **Finalist**, Qualcomm Innovation Fellowship
1997 **Phi Beta Kappa**, Middlebury College
1997 **Highest Honors** in English Literature, Middlebury College
1997 **Winner**, Reid L. Carr prize, Middlebury College

## RESEARCH FUNDING

### Grants

2022– PI, *CSR: Medium: MASON: Memory at Scale on Networks*,
**National Science Foundation**, $500,000.
2020– PI, *TrustWorthy Information Storage Technology Enhanced Devices (TWISTED)* Phase II,
**Defense Advanced Research Projects Agency**, $885,670.
2020–2021 co-PI, *TrustWorthy Information Storage Technology Enhanced Devices (TWISTED)* Phase I,
**Defense Advanced Research Projects Agency**, $100,000.
2019 PI, *CAREER: Lineage-driven Fault Injection: REU Supplement*, Student: Eliana Philips,
**National Science Foundation**, $8,000.
2018– PI, *CSR: Medium: Declarative Programmable Storage*,
**National Science Foundation**, $425,000.
2017–2021 PI, *CAREER: Lineage-driven Fault Injection*,
**National Science Foundation**, $483,000.

### Sponsored Projects

2023-2025 PI, *Improved Microservice Communication through Rethought Data Center Memory Architecture*,
**Intel**, $180,000.
2021-2023 PI, *Network Support for Disaggregated Memory with Explicit Identifiers*,
**Intel**, $150,000.
2019–2022 PI, *Computational Storage for Accelerated HCA Data Repository*,
**Seagate**, $355,600.

### Gifts

2022 Meta, $50,000
2021 Facebook, $50,000.
2019 Facebook, $50,000.
2019 Ebay, $125,000.
2018 Ebay, $125,000.
2017 Facebook, $50,000.
2017 Futurewei, $100,000.

## SCHOLARLY AND CREATIVE WORK

*NOTE:* ($^*$) denotes a student co-author, and ($^\ddagger$) denotes a student co-author who was one of my advisees.

### Book Chapters

B1. **Peter Alvaro**, "The Experiment Selection Problem (and a solution)", In *Chaos Engineering: System Resiliency in Practice*, Casey Rosenthal and Nora Jones(ed.), O'Reilly, 2020.

## Journals

J9. Daniel Bittman‡, **Peter Alvaro**, Darrell Long, Pankaj Mehra, Ethan Miller, "Twizzler: a *Data-centric* OS for Non-volatile Memory", *ACM Transactions on Storage (TOS)*, **17** (2), June 2021.

J8. Kyle Kingsbury, **Peter Alvaro**, "Elle: Inferring Isolation Anomalies from Experimental Observations", *Proceedings of the VLDB Endowment (PVLDB)*, **14** (3), 2021.

J7. Joseph M. Hellerstein, **Peter Alvaro**, "Keeping CALM: When Distributed Consistency is Easy", *Communications of the ACM (CACM)*, **63** (9), September 2020.

J6. Haryadi S. Gunawi, Riza O. Suminto, Russell Sears, Casey Golliher, Swaminathan Sundararaman, Xing Lin, Tim Emami, Weiguang Sheng, Nematollah Bidokhti, Caitie McCaffrey, Gary Grider, Parks M. Fields, Kevin Harms, Robert B. Ross, Andree Jacobson, Robert Ricci, Kirk Webb, **Peter Alvaro**, Mingzhe Hao, Huaicheng Li, H. Birali Runesha, "Fail-Slow at Scale: Evidence of Hardware Performance Faults in Large Production Systems", *ACM Transactions on Storage (TOS)*, **14** (3), October 2018.

J5. **Peter Alvaro**, Severine Tymon, "Abstracting the Geniuses Away from Failure Testing", *Communications of the ACM (CACM)*, **61** (1), November 2017.

J4. **Peter Alvaro**, Neil Conway, Joseph M. Hellerstein, David Maier, "Coordination Analysis and Placement for Distributed Programs", *Transactions on Database Systems (TODS)*, **42** (4), October 2017 (ACM).

J3. Tom J. Ameloot, Jan Van den Bussche, William R. Marczak, **Peter Alvaro**, and Joseph M. Hellerstein, "Putting logic-based distributed systems on stable grounds", *Theory and Practice of Logic Programming*, **16**(2), August 2015.

J2. Neil Conway, **Peter Alvaro**, Emily Andrews, and Joseph M Hellerstein, "Edelweiss: Automatic Storage Reclamation for Distributed Programming", *Proceedings of the VLDB Endowment (PVLDB 2014)*, **7**(6), February, 2014.

J1. **Peter Alvaro**, Tyson Condie, Neil Conway, Joseph M Hellerstein, and Russell Sears, "I do declare: consensus in a logic language", *ACM SIGOPS Operating Systems Review*, **43** (4), January 2010.

## Refereed Conference & Workshop Papers

C43. Achilles Benetopoulos‡, Robert Soulé, Andi Quinn, **Peter Alvaro**, "Yield Not Thy Core", *Proceedings of the 21st European Conference on Computer Systems(Eurosys'26)*, Edinburgh, Scotland, 2026.

C42. Devashish R. Purandare, **Peter Alvaro**, Avani Wildani, Darrell Long, Ethan Miller, "Valet: Efficient Data Placement on Modern SSDs", *Proceedings of the 16th Symposium on Cloud Computing (SOCC'25)*, Fully virtual event (ACM), 2025, **Best Paper Award**.

C41. Brian Choi, George Neville-Neil, Alex Yuan, Avi Silberschatz, Peter Alvaro, Robert Soulé, "Towards Automatically Extracting the Relational Model of an Operating System", *Proceedings of the 19th International Symposium on Database Programming Languages (DBPL'25)*, Berlin, Germany, 2025.

C40. Rebecca Isaacs, Rupak Majumdar, **Peter Alvaro**, Kiran-Kuman Muniswamy-Reddy, Mahmoud Salamati, Sadegh Soudjani, "Analyzing Metastable Failures', *Proceeedings of the 20th Workshop on Hot Topics in Operating Systems (HotOS'25)*, Banff, Alberta, Canada (USENIX), 2025.

C39. Robert Soulé, George Neville-Neil, Stelios Kasouridis, Alex Yuan, Avi Silberschatz, **Peter Alvaro**, "OSDB: Exposing the Operating System's Inner Database", *Proceedings of the 15th Annual Conference on Innovative Data Systems Research (CIDR'25)*, Amsterdam, The Netherlands, 2025.

C38. **Peter Alvaro**, Matthew Adiletta, David Cheng, Adrian Cockcroft, Frank Hady, Ramesh Illikkal, Esteban Ramos‡, Robert Soulé, "NotNets: Accelerating Microservices by Bypassing the Network", *Proceedings of the 15th ACM SIGOPS Asia-Pacific Workshop on Systems (APSys'24)*, Kyoto, Japan (ACM), 2024.

C37. Esteban Ramos‡,Robert Soulé, **Peter Alvaro**, Pietro Bressana, Edmund Chen, Uri Cummings, Rui Li, James Tsai, Rajit Manohar, "SplitRPC: An Isolation Architecture for RPC Software Stacks", *Proceedings of the 15th ACM SIGOPS Asia-Pacific Workshop on Systems (APSys'24)*, Kyoto, Japan (ACM), 2024.

C36. Tuan Tran‡, **Peter Alvaro**, Faisal Nawab, Owen Arden, "Unstick Yourself: Recoverable Byzantine Fault Tolerant Services", *Proceedings of the IEEE International Conference on Blockchain and Cryptocurrency*, Dubai, UAE (IEEE), 2023.

C35. Kamala Ramasubramanian‡, Eliana Philips‡, **Peter Alvaro**, "Mining microservice design patterns", *Proceedings of the 13th ACM Symposium on Cloud Computing (SoCC'22)*, San Francisco, CA (ACM), 2022.

C34. Tuan Tran‡, Haofan Zheng*, **Peter Alvaro**, Owen Arden, "Payment Channels Under Network Congestion", *Proceedings of the 2022 IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2022)*, Shanghai, China (IEEE), 2022.

C33. Jun Zhang‡, Robert Ferydouni‡, Aldrin Montana‡, Daniel Bittman‡, **Peter Alvaro**, "3MileBeach: A Tracer with Teeth", *Proceedings of the Twelfth ACM Symposium on Cloud Computing (SoCC 2021)*, Seattle, WA (ACM), 2021.

C32. Daniel Bittman‡, Robert Soulé, Ethan Miller, Vishal Shrivastav, Pankaj Mehra, Matthew Boisvert‡, Avi Silberschatz, **Peter Alvaro**, "Don't Let RPCs Constrain Your API", *Proceedings of the Twentieth ACM Workshop on Hot Topics in Networks (HotNets 2021)*, Online (ACM), 2021.

C31. Daniel Bittman‡, **Peter Alvaro**, Darrell Long, Pankaj Mehra, Ethan Miller, "Twizzler: a *Data-centric* OS for Non-volatile Memory", *Proceedings of the 2020 USENIX Annual Technical Conference (ATC 2020)*, Boston, MA (USENIX), 2020, **Best Presentation Award**.

C30. Daniel Bittman‡, **Peter Alvaro**, Ethan Miller, "A Persistent Problem: Managing Pointers in NVM", *Proceedings of the 10th Workshop on Programming Languages and Operating Systems (PLOS 2019)*, Ontario, Canada (ACM), 2019.

C29. Kathryn Dahlgren*, Jeff Lefevre, Ashay Shirwadkar, Ken Iizawa, Aldrin Montana, **Peter Alvaro**, Carlos Maltzahn, "Towards Physical Design Management in Storage Systems", *Proceedings of the 4th International Parallel Data Systems Workshop (PDSW 2019)*, Denver, CO (ACM/IEEE).

C28. Christopher S. Meiklejohn*, Heather Miller, **Peter Alvaro**, "Partisan: Scaling the Distributed Actor Runtime", *Proceedings of the 2019 USENIX Annual Technical Conference (ATC 2019)*, Renton, WA (USENIX), 2019.

C27. Daniel Bittman‡, **Peter Alvaro**, Darrell D. E. Long, Ethan L. Miller, "A Tale of Two Abstractions: The Case for Object Space", *Proceedings of the 11th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage 2019)*, Renton, WA (USENIX), 2019.

C26. Daniel Bittman‡, Ethan L. Miller, **Peter Alvaro**, "Co-evolving Tracing and Fault Injection with Box of Pain", *Proceedings of the 9th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud 2019)*, Renton, WA (USENIX), 2019.

C25. Lindsey Kuper, **Peter Alvaro**, "Towards Domain-specific Solvers for Distributed Consistency", *Proceedings of the 3rd Summit on Advances in Programming Languages (SNAPL 2019)*, Providence, RI, 2019.

C24. Daniel Bittman‡, Darrell D. E. Long, **Peter Alvaro**, Ethan Miller, "Optimizing Systems for Byte-Addressable NVM by Reducing Bit Flipping", *Proceedings of the 17th USENIX Conference on File and Storage Technologies (FAST '19)*, Boston, MA (USENIX), 2019.

C23. Lennart Oldenburg‡, Xiangfeng Zhu‡, Kamala Ramasubramanian‡, **Peter Alvaro**, "Fixed It For You: Protocol Repair Using Lineage Graphs", *Proceedings of the 9th biennial Conference on Innovative Data Systems Research (CIDR 2019)*, Asilomar, CA, 2019.

C22. Michael Whittaker*, Cristina Teodoropol*, **Peter Alvaro**, Joseph M. Hellerstein, "Debugging Distributed Systems with Why-Across-Time Provenance", *Proceedings of the Ninth ACM Symposium on Cloud Computing (SoCC 2018)*, Carslbad, CA (ACM), 2018.

C21. Daniel Bittman‡, Matthew Gray*, Justin Raizes*, Sinjoni Mukhopadhyay*, Matt Bryson*, **Peter Alvaro**, Darrell Long and Ethan Miller, "Designing Data Structures to Minimize Bit Flips on NVM", *Proceedings of the 7th IEEE Non-Volatile Memory Systems and Applications Symposium (NVMSA 2018)*, Hakodate, Japan (IEEE), 2018.

C20. Michael A. Sevilla*, Reza Nasirigerdeh*, Carlos Maltzahn, Jeff LeFevre, Noah Watkins*, **Peter Alvaro**, Margaret Lawson, Jay Lofstead, Jim Pivarskia, "Tintenfisch: File System Namespace Schemas and Generators", *Proceedings of the 10th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage 2018)*, Boston, MA (USENIX), 2018.

C19. Michael Sevilla*, Carlos Maltzahn, **Peter Alvaro**, Reza Nasirigerdeh*, Bradley Settlemyer, Danny Perez, David Rich and Galen Shipman, "Programmable Caches with a Data Management Language & Policy Engine", *Proceedings of the 18th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid 2018)*, Washington, DC (IEEE/ACM), 2018.

C18. Michael Sevilla*, Ivo Jimenez*, Noah Watkins*, Jeff Lefevre, Shel Finkelstein, **Peter Alvaro**, 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 2018)*, Vancouver, BC, Canada (IEEE), May 2018.

C17. Haryadi S. Gunawi, Riza O. Suminto, Russell Sears, Casey Golliher, Swaminathan Sundararaman, Xing Lin, Tim Emami, Weiguang Sheng, Nematollah Bidokhti, Caitie McCaffrey, Gary Grider, Parks M. Fields, Kevin Harms, Robert B. Ross, Andree Jacobson, Robert Ricci, Kirk Webb, **Peter Alvaro**, Mingzhe Hao, Huaicheng Li, H. Birali Runesha, "Fail-Slow at Scale: Evidence of Hardware Performance Faults in Large Production Systems", *Proceedings of the 16th USENIX Conference on File and Storage Technologies (FAST 2018)*, Oakland, CA (USENIX), February 2018.

C16. Kamala Ramasubramanian[‡], Kathryn Dahlgren[‡], Asha Karim[‡], Sanjana Maiya[*], Sarah Borland[*], **Peter Alvaro**, "Growing a Protocol", *Proceedings of the 9th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud 2017)*, Santa Clara, CA (USENIX), July 2017.

C15. Noah Watkins[*], Michael A. Sevilla[*], Ivo Jimenez[*], Kathryn Dahlgren[‡], **Peter Alvaro**, Shel Finkelstein, Carlos Maltzahn, "DeclStore: Layering is for the Faint of Heart", *Proceedings of the 9th USENIX Workshop on Hot Topics in Storage and File Systems (HotStorage 2017)*, Santa Clara, CA (USENIX), July 2017.

C14. Michael A. Sevilla[*], Noah Watkins[*], Ivo Jimenez[*], **Peter Alvaro**, Shel Finkelstein, Jeff LeFevre, Carlos Maltzahn, "Malacology: A Programmable Storage System", *Proceedings of the 12th European conference on Computer systems (Eurosys 2017)*, Belgrade, Serbia, April, 2017.

C13. **Peter Alvaro**, Kolton Andrus, Chris Sanden, Casey Rosenthal, Ali Basiri, Lorin Hochstein, "Automating Failure Testing Research at Internet Scale", *Proceedings of the 7th Annual Symposium on Cloud Computing (SoCC 2016)*, Santa Clara, CA: ACM, October, 2016.

C12. **Peter Alvaro**, Joshua Rosen, and Joseph M Hellerstein, "Lineage-driven fault injection", *Proceedings of the 2015 ACM SIGMOD International Conference on Management of Data (SIGMOD 2015)*, Melbourne, Victoria, Australia: ACM, May 2015.

C11. **Peter Alvaro**, Neil Conway, Joseph M. Hellerstein, and David Maier, "Blazes: Coordination analysis for distributed programs", *Proceedings of the 30th International Conference on Data Engineering (ICDE 2014)*, Chicago, IL: IEEE, April 2014.

C10. **Peter Alvaro**, Peter Bailis, Neil Conway, and Joseph M Hellerstein, "Consistency without borders", *Proceedings of the 4th Annual Symposium on Cloud Computing (SoCC 2013)*, Santa Clara, CA: ACM, October, 2013.

C9. Neil Conway, William R Marczak, **Peter Alvaro**, Joseph M Hellerstein, and David Maier, "Logic and lattices for distributed programming", *Proceedings of the 3rd Annual Symposium on Cloud Computing (SoCC 2012)*, San Jose, CA: ACM, October, 2012.

C8. **Peter Alvaro**, Tom J. Ameloot, Joseph M. Hellerstein, William R Marczak, and Jan Van den Bussche, "A declarative semantics for Dedalus", *Proceedings of the Second international conference on Datalog in Academia and Industry (Datalog2.0 2012)*, Vienna, Austria, September 2012.

C7. William R Marczak, **Peter Alvaro**, Neil Conway, Joseph M Hellerstein, and David Maier, "Confluence analysis for distributed programs: A model-theoretic approach", *Proceedings of the Second international conference on Datalog in Academia and Industry (Datalog2.0 2012)*, Vienna, Austria, September 2012.

C6. **Peter Alvaro**, Andrew Hutchinson, Neil Conway, William R Marczak, and Joseph M Hellerstein, "BloomUnit: Declarative testing for distributed programs", *Proceedings of the Fifth International Workshop on Testing Database Systems (DBTest 2012)*, Scottsdale, AZ: ACM, May 2012.

C5. **Peter Alvaro**, Neil Conway, Joe Hellerstein, and William R Marczak, "Consistency Analysis in Bloom: a CALM and Collected Approach", *Proceedings of the 5th Biennial Conference on Innovative Data Systems Research (CIDR 2011)*, Asilomar, CA, January, 2011.

C4. Haryadi S Gunawi, Thanh Do, Pallavi Joshi, **Peter Alvaro**, Joseph M Hellerstein, Andrea C Arpaci-Dusseau, Remzi H Arpaci-Dusseau, Koushik Sen, and Dhruba Borthakur, "FATE and DESTINI: a framework for cloud recovery testing", *Proceedings of the 8th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2011)*, Boston, MA: USENIX, April 2011.

C3. **Peter Alvaro**, Tyson Condie, Neil Conway, Khaled Elmeleegy, Joseph M Hellerstein, and Russell Sears, "Boom analytics: exploring data-centric, declarative programming for the cloud", *Proceedings of the 5th European conference on Computer systems (Eurosys 2010)*,

C2. Tyson Condie, Neil Conway, **Peter Alvaro**, Joseph M Hellerstein, Khaled Elmeleegy, and Russell Sears, "MapReduce online", *Proceedings of the 7th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2010)*, San Jose, CA: USENIX, April 2010.

C1. **Peter Alvaro**, William R Marczak, Neil Conway, Joseph M Hellerstein, David Maier, and Russell Sears, "Dedalus: Datalog in time and space", *Proceedings of the First international Conference on Datalog Reloaded (Datalog 2010)*, Oxford, England, September 2010.

### Technical Reports

T2. Aldrin Montana[‡], Yuanqing Xue, Jeff LeFevre, Carlos Maltzahn, Josh Stuart, Philip Kufeldt, **Peter Alvaro**, "A Moveable Beast: Partitioning Data and Compute for Computational Storage", *Technical Report: arXiv:2212.11459v1*, December 2022.

T1. Noah Watkins, Michael Sevilla, Ivo Jimenez, Neha Ojha, **Peter Alvaro**, Carlos Maltzahn, "Brados: Declarative, Programmable Object Storage", Technical Report UCSC-SOE-16-12, December 2016.

### Invited Papers

I2. Daniel Bittman, **Peter Alvaro**, Darrell D. E. Long, Ethan L. Miller, "The Flipside: A Bit Flip Saved is Power and Lifetime Earned", *;login: the USENIX magazine*, April 2019.

I1. **Peter Alvaro** "OK, but why? Tracing and debugging distributed systems", *Research for Practice, ACM Queue*, January 2018.

## SOFTWARE

SW2. `LDFI`: Lineage-driven fault injection simulator.

SW1. `BUD`: The Bloom disorderly programming language, implemented as a ruby DSL.

## PROFESSIONAL ACTIVITIES

### Service to Professional Societies

2022– **Member:** Editorial Board, *ACM Queue*.
**Editor:** Research for Practice, appearing in *ACM Queue* and *Communications of the ACM*.

### External Service

2022 **External Reviewer:** Academic Program Review, Computer Science Department, San Francisco State University

### Conference Organization

2026 **Heavy Program Committee:** ACM SOSP 2026
**External Reviewer:** VLDB 2026
2025 **Associate Editor:** SIGMOD 2025
2024 **Program Committee co-Chair:** ACM SOCC 2024
**Organizer:** 2nd Workshop on Disruptive Memory Systems (DIMES).
**Program Committee:** USENIX OSDI 2024
**Program Committee:** SIGMOD 2024
2023 **Organizer:** 1st Workshop on Disruptive Memory Systems (DIMES).
**Local Arrangements Chair:** ACM SoCC 2023
**Program Committee:** USENIX NSDI 2023
**Program Committee:** ACM OOPSLA 2023
2022 **Program Chair:** High Performance Transaction Systems (HPTS) 2022
2021 **Mentorship Chair:** ACM SoCC 2021
**Session Chair:** USENIX TaPP 2021
**Review Panelist:** National Science Foundation
**Program Committee:** ACM SIGMOD 2021 (**Distinguished PC Member**)

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| | **Program Committee:** | USENIX TaPP 2021 |
| | **External Reviewer:** | The VLDB Journal |
| 2020 | **Session Chair:** | USENIX HotCloud 2020 |
| | **Program Committee:** | ACM SIGMOD 2020 |
| | **Program Committee:** | USENIX HotCloud 2020 |
| | **Program Committee:** | DISPA 2020 |
| | **Program Committee:** | PaPoC 2020 |
| 2019 | ***Core* Program Committee:** | ACM SIGMOD 2019 |
| | **Gong Show Emcee:** | High Performance Transaction Systems (HPTS) 2019 |
| | **Session Chair:** | High Performance Transaction Systems (HPTS) 2019 |
| | **Program Committee:** | High Performance Transaction Systems (HPTS) 2019 |
| 2018 | **Program Committee:** | ACM SIGMOD 2018 |
| | | ACM SoCC 2018 |
| | **External Reviewer:** | USENIX FAST 2018 |
| | **Poster co-Chair:** | ACM SoCC 2018 |
| 2017 | **Program Committee:** | ACM SIGMOD 2017 |
| | | ACM SoCC 2017 |
| | | O'Reilly Velocity 2017 |
| | | DBPL 2017 |
| | | FADS 2017 |
| | **Session Chair:** | ACM SoCC 2017 |
| | **Review Panelist:** | National Science Foundation |
| 2016 | **Program co-Chair:** | Workshop on Principles and Practice of Consistency for Distributed Data (PaPoC) 2016. |
| | **Program Committee:** | ACM SIGMOD 2016 |
| | | PVLDB 2016 |
| | | PMLDC 2016 |
| | **Travel Award Selection Committee co-Chair:** | ACM SIGMOD 2016 |
| 2015 | **Program Committee:** | PaPoC 2015 |

## Membership in Professional Associations

2015-present Member, Association for Computing Machinery.
2016-present Member, USENIX.

## Talks

2026 "Retry is an Open Problem", HPTS 2026, Asilomar, CA, October 2026.
2026 **Keynote:** "Where all the Ladders Start", BugBash 2026, Washington, DC, April 2026.
2025 "Analyzing Metastable Failures", HotOS'25, Banff, Alberta, Canada, May 2025.
2025 "TWISTED Stick: A demo in four acts", DARPA, Washington, DC, April, 2025.
2023 "Sharing in a world of distant and persistent memory", Third European Winter School on Operating Systems, Ulm, Germany, April 2023.
2022 "What not where: sharing in a world of distributed, persistent memory", IAP Berkeley/Stanford/UCSC Cloud Workshop. Stanford, CA, May 2022.
2021 **Keynote:** 'What not Where', CodeBEAM 2021, San Jose, CA, November 2021.
"Elle: Opaque-box Serializability Testing", VLDB 2021, Cophenhagen, Denmark, August 2021.
Panelist: "The Future of Observability", o11ycon 2021, San Francisco, CA, June 2021.
**Keynote:** 'What not Where', PaPoC and LADIS Workshops (Eurosys), Edinburgh, UK, April 2021.
"Orchestrating Chaos", Expedia, March 2021.
"The Twilight of the Experts', DE Shaw, March 2021.
2020 "What not Where", Distributed Systems Lab, UC Santa Barbara, December 2020.
"Disorderly Labs", UCSC Student Chapter of the ACM Meetup, Santa Cruz, CA, November 2020.
**Keynote:** "What not Where: Why a blue sky OS?", BuzzConf, Buenos Aires, Argentina, July 2020.

"Elle: Practical Serializability Verification", Relational AI, Berkeley, CA, May 2020.

2019 "Machine Learning and Distributed Systems: Our Shared Future", SACNAS National Diversity in STEM Conference, Honolulu, HI, November 2019.
"The State of the Cart", SRE Day 2019, eBay, San Jose, CA, September 2019.
"The Twilight of the Experts", Lyft, Seattle, WA, July 2019.
"Fixed it for you!", Microsoft, Santa Clara, CA, June 2019.
"The Twilight of the Experts (with a prelude of myths and an appendix of dreams)", Salesforce, San Francisco, CA, June 2019.
"Co-evolving tracing and fault injection with Box of Pain", Storage Systems Research Center (SSRC) Retreat, UC Santa Cruz, Santa Cruz, CA, May 2019.
"Fixed it for you!", Norcal DB Day, Linkedin, Mountain View, CA, 2019.
"Fixed it for you: protocol repair using lineage graphs", CIDR, Asilomar, January 2019.

2018 "3 things I wish I knew when I started designing languages", QCon, San Francisco, November 2018.
"The Future of Observability", o11ycon, San Francisco, CA, August 2018.
"Does your fault-tolerant distributed system tolerate faults?", Data Consistency in Distributed Systems: Algorithms, Programs, and Databases, Schloss Dagstuhl, Germany, February 2018.
"Does your fault-tolerant distributed system tolerate faults?", eBay, San Jose, CA, January 2018.

2017 "The Twilight of the Experts", HPTS 2017, Asilomar, CA, October 2017.
"The Twilight of the Experts", Chaos Community Day, San Francisco, CA, September 2017.
"Orchestrating Chaos", Apple, Sunnyvale, CA, June 2017.
**Keynote:** "Orchestrated Chaos (with a prelude of myths and an appendix of dreams)", O'Reilly Velocity, San Jose, CA, June 2017.
"Does your fault-tolerant data management system tolerate faults?" Norcal DB Day, San Francisco, CA, April 2017.
"Orchestrating Chaos", Erlang Factory, San Francisco, CA, March 2017.
"Orchestrating Chaos", Facebook Developer Infrastructure Tech Talk Series, Menlo Park, CA, March 2017.
"GeneralStore: Declarative Programmable Storage", CIDR 2017, Santa Cruz, CA, January 2017.

2016 **Keynote:** "Orchestrated Chaos", Reactive Summit 2016.
**Keynote:** "Monkeys in Lab Coats: Applying Failure Testing Research @Netflix", QCon London 2016.
"'Cause, that's why", Papers We Love, San Francisco, CA, December 2016.
"Applying Database Research in the Wild", Stanford University DAWN Seminar, Stanford, CA, November 2016.
"Applying Database Research in the Wild", UC Berkeley Database Seminar, Berkeley, CA, November 2016.
"Applying Failure Testing Research @Netflix", QCon San Francisco, San Francisco, CA, November 2016.
"Orchestrated Chaos", Chaos Community Day, Amazon, Seattle, WA, August 2016.
"Lineage-driven Fault Injection", VMWare Research Group Chat, VMWare, Palo Alto, CA, August 2016.
"Databases are dead: long live databases!", Norcal DB Day, Google, Inc. Mountain View, CA May, 2016.

2015 **Keynote:** "I see what you mean", Strange Loop 2015, Saint Louis, MO, September, 2015.
"Lineage-driven fault injection", ACM SIGMOD 2015, Melbourne, Victoria, Australia, June, 2015.
"Lineage-driven fault injection", Pivotal, Palo Alto, CA, November, 2015.
"Lineage-driven fault injection", Arista Networks, San Francisco, CA, November, 2015.

2014 **Keynote:** "Outwards from the middle of the maze", RICON 2014, Las Vegas, NV.
"Blazes: coordination analysis for distributed programs", ICDE 2014, Chicago, IL, April, 2014.
"Ineluctable modality of the distributed", Papers We Love SF, San Francisco, CA, August, 2014.

2013 "Consistency without borders", ACM SoCC 2013, Santa Clara, CA, October, 2013.
"Bloom and CALM: Programming the Cloud", Norcal DB Day 2013, Stanford, CA, April, 2013.
"Disorderly Distributed Programming with Dedalus and Bloom", UCLA Programming Language Seminar, March, 2013.

Panelist, *Think Distributed* Panel, Ricon 2012, San Francisco, CA, December, 2013.

2012 "BloomUnit: Declarative testing for distributed programs", ACM DBTest 2012, Scottsdale, AZ, May 2012.

"Bloom: disorderly programming for a distributed world", lang.next, Microsoft, Inc., Redmond, WA, April, 2012.

2011 "Bloom: disorderly programming. CALM analysis", Ask.com, Oakland, CA, March, 2011.

"Bloom: CALMly building skyscrapers on quicksand", Twitter, Inc., San Francisco, CA, January 2011.

2010 "Show and Tell: Building a consistent, replicated shopping cart in bloom", TDS Research Group, MIT, Cambridge, MA, November 2010.

"I Do Declare: Consensus in a Logic Language", OSQ Retreat, Santa Cruz, CA, May 2010.

2009 "I Do Declare", NetDB 2009, Big Sky, MT, October 2009.

"BOOM: Data-Centric Programming For The Data Center", Infolunch, Stanford University, Stanford, CA, April 2009.

## Press

P10. "Chaos Community Broadcast: the one with Peter Alvaro", Chaos Community Broadcast, September 2020.

P9. "Distributed Systems Research with Peter Alvaro", Software Engineering Daily Podcast, May 28, 2020.

P8. "Box of Pain: A new tracer and fault injector for distributed systems", Ingrid Fadelli, TechXplore, May 3, 2019.

P7. "Keeping CALM: when distributed consistency is easy", Adrian Colyer, The Morning Paper, March 6, 2019.

P6. "Fixed it for you: protocol repair using lineage graphs", Adrian Colyer, The Morning Paper, February 1, 2019.

P5. "Netflix picks up Molly at university, scores harsh character assessment", Darren Pauli, The Register, February 1, 2016.

P4. "Automated Failure Testing a.k.a. Training Smarter Monkeys", Netflix Technology Blog, January 20, 2016.

P3. "Consistency Without Borders", Adrian Colyer, The Morning Paper, September 7, 2015.

P2. "Lineage-driven Fault Injection", Adrian Colyer, The Morning Paper, March 26, 2015.

P1. "Desert Island Papers: Peter Alvaro", Adrian Colyer, February 16, 2015.

# UNIVERSITY SERVICE

## UC-wide Service

2022-23 University Committee on Academic Computing and Communications (UCACC)

2021-22 University Committee on Academic Computing and Communications (UCACC)

## School Service

2026 Academic Senate Secretary

2026 XXXX the thing reviewing stuff

2022–23 Unparalleled Undergraduate Student Education and Experience Subcommittee

2022–23 Chair, Committee on Information Technology

2021–22 Chair, Committee on Information Technology

2020-2026 Executive Board Member, UCSC Faculty Association.

## Divisional Service

2025 Chair, Ad-hoc Divisional Personnel Review Committee

2019–present Faculty Sponsor, UCSC Student Chapter of the ACM.

2022 Panelist, ACM-W and Girls Who Code: BSOE Professor Panel.

2018–21 BSOE Council on Diversity, Equity and Inclusion.

2020 BSOE Brand Personality Forum.

2019 Workshop Design: "Machine learning and distributed systems: our shared future." SACNAS Diversity in Stem Conference, 2019.

2019 Panelist, CSUMB recruitment visit.

## Departmental Service

| | |
|---|---|
| 2022–26 | CSE Area Chair: Systems, Networks, and Security |
| 2023–26 | Computer Science and Engineering Dept. Student Success Committee |
| 2022–26 | Computer Science and Engineering Dept. Personnel Committee |
| 2021–22 | Computer Science and Engineering Dept. Research Committee |
| 2021–22 | Computer Science and Engineering Dept. Faculty Search Committee: ECS Search |
| 2020–21 | Computer Science and Engineering Dept. Faculty Search Committee: TCS Search |
| 2020–21 | Computer Science and Engineering Dept. Faculty Search Committee: ECS Search |
| 2020–21 | Girls Who Code and Society of Women Engineers Professor Panel: "Is your major the right major for you?" |
| 2020–21 | CSE200 Workshop support: *Creating Effective Learning Environments* and *Practicing Inclusivity* |
| 2019–20 | Computer Science and Engineering Dept. Personnel Committee |
| 2018–19 | Diversity Liason, Computer Science Dept. Faculty Search Committee |
| 2018–19 | Computer Science Dept. Faculty Search Committee |
| 2017–18 | Chair, Computer Science Dept. Faculty Search Subcommittee (Distributed Systems) |
| 2017–18 | Computer Science Dept. Faculty Search Committee |
| 2017 | Curriculum development: *Computer Systems Fundamentals* |
| 2016–17 | Computer Science Dept. Faculty Search Committee |
| 2015–16 | Computer Science Dept. Graduate Admission Committee |

# MENTORING AND STUDENT ADVISING

## Doctoral Students

| Dates | Relationship | Degree Year | Name and Activities |
|---|---|---|---|
| 2021 Fall - Present | Primary Supervisor | | Achillefs Benetopoulos |
| 2021 Fall - Present | Primary Supervisor | | Esteban Ramos |
| 2021 Winter - Present | Primary Supervisor | | Holly Casaletto |
| 2019 Fall - 2025 Winter | Primary Supervisor | 2025 | Jun Zhang |
| 2018 Fall - Present | Primary Supervisor | | Aldrin Montana |
| 2016 Fall - 2024 Spring | Primary Supervisor | | Tuan Tran |
| 2017 Fall - 2022 Fall | Primary Supervisor | 2023 | Daniel Bittman |
| 2016 Fall - 2018 Spring | Primary Supervisor | | Kathryn Dahlgren |
| 2015 Fall - 2022 Summer | Primary Supervisor | 2022 | Kamala Ramasubramanian |
| 2025 Spring | Other Advisor | | Farid Zakaria<br>**Member:** Dissertation Committee |
| 2025 Spring | Other Advisor | | Lokesh Jaliminche<br>**Member:** Dissertation Committee |
| 2025 Winter | Other Advisor | | Patrick Redmond<br>**Chair:** Qualifying Exam Committee |
| 2025 Winter | Other Advisor | | Harikrishna Kuttivelil<br>**Chair:** Qualifying Exam Committee |
| 2025 Winter | Primary Supervisor | 2025 | Jun Zhang<br>**Chair:** Dissertation Committee |
| 2024 Fall | Other Advisor | 2024 | Haofan Zheng<br>**Member:** Dissertation Committee |
| 2024 Spring | Primary Supervisor | 2024 | Tuan Tran<br>**Chair:** Dissertation Committee |
| 2024 Spring | Other Advisor | | Roy Shadmon<br>**Chair:** Qualifying Exam Committee |
| 2024 Winter | Other Advisor | 2024 | Devashish Purendare<br>**Member:** Dissertation Committee |

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| 2024 Winter | External Member | 2024 | Christopher Meiklejohn (CMU)<br>**Member:** Dissertation Committee |
| 2023 Fall | Primary Supervisor | | Jun Zhang<br>**Member:** Qualifying Exam Committee |
| 2023 Summer | Primary Supervisor | | Aldrin Montana<br>**Member:** Qualifying Exam Committee |
| 2023 Summer | Other Advisor | 2023 | Jianshen Liu<br>**Member:** Dissertation Committee |
| 2023 Spring | Other Advisor | 2023 | Lokesh Nagappa Jaliminche<br>**Chair:** Qualifying Exam Committee |
| 2023 Winter | Other Advisor | 2023 | Eriq Augustine<br>**Member:** Dissertation Committee |
| 2023 Winter | External Examiner | 2023 | Kalev Alpernas (Tel Aviv University)<br>**Member:** Dissertation Committee |
| 2022 Fall | Other Advisor | | Eugene Chou<br>**Chair:** Qualifying Exam Committee |
| 2022 Fall | Other Advisor | | Anuj Kaul<br>**Chair:** Qualifying Exam Committee |
| 2022 Fall | Other Advisor | | Kyle Fredrickson<br>**Chair:** Qualifying Exam Committee |
| 2022 Summer | Other Advisor | | Christopher Meiklejohn (Carnegie Mellon University)<br>**Member:** Qualifying Exam Committee |
| 2022 Spring | Primary Supervisor | 2022 | Kamala Ramasubramanian<br>**Chair:** Dissertation Committee |
| 2022 Winter | Other Advisor | 2022 | Daniel Alves<br>**Member:** Dissertation Committee |
| 2022 Winter | Other Advisor | 2022 | Kenneth Chang<br>**Member:** Dissertation Committee |
| 2021 Fall | Other Advisor | | Haofan Zheng<br>**Chair:** Qualifying Exam Committee |
| 2021 Spring | Other Advisor | | Sohum Banerjea<br>**Chair:** Qualifying Exam Committee |
| 2021 Spring | Other Advisor | | Eriq Augustine<br>**Member:** Qualifying Exam Committee |
| 2020 Fall | Other Advisor | | Kenneth Chang<br>**Member:** Qualifying Exam Committee |
| 2020 Fall | Other Advisor | 2020 | Samuel Mansfield<br>**Member:** Dissertation Committee |
| 2020 Spring | Other Advisor | | Daniel Alves<br>**Member:** Qualifying Examination Committee |
| 2019 Fall | Other Advisor | 2020 | Sam Mansfield<br>**Member:** Qualifying Examination Committee |
| 2019 Spring | Primary Supervisor | 2019 | Kamala Ramasubramanian<br>**Member:** Qualifying Examination Committee |
| 2019 Winter | Other Advisor | 2019 | Ivo Jimenez<br>**Member:** Dissertation Committee |
| 2018 Fall | Other Advisor | 2016 | Daniel Bittman<br>**Member:** Qualifying Examination Committee |
| 2018 Fall | Other Advisor | 2018 | Dustin Rhodes<br>**Member:** Dissertation Committee |
| 2018 Fall | Other Advisor | 2018 | Noah Watkins<br>**Member:** Dissertation Committee |
| 2018 Spring | Other Advisor | 2018 | Michael Sevilla<br>**Member:** Dissertation Committee |

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|---|---|---|---|
| 2016 Fall | Other Advisor | 2016 | Richard Halpert<br>**Member:** Dissertation Committee |
| 2016 Fall | Other Advisor | 2016 | Kun Qian<br>**Member:** Dissertation Committee |
| 2016 Spring | Other Advisor | 2016 | Dustin Rhodes<br>**Member:** Qualifying Examination Committee |
| 2016 Spring | Other Advisor | 2016 | Christine Strong<br>**Member:** Dissertation Committee |

## Masters Students

| Dates | Relationship | Degree Year | Name and Activities |
|---|---|---|---|
| 2021 Fall | Other Advisor | 2021 | Eliana Philips<br>**Member:** Masters Thesis Committee |
| 2021 Summer | Other Advisor | 2021 | Yiming Zhang<br>**Member:** Masters Project Committee |
| 2021 Spring | Other Advisor | 2021 | Michael Covarrubias<br>**Chair:** Masters Project Committee |
| 2020 Summer | Other Advisor | 2020 | Barbara Moretto Dama<br>**Chair:** Masters Thesis Committee |
| 2020 Spring | Other Advisor | 2020 | Alexander Smirnov<br>**Chair:** Masters Project Committee |
| 2019 Spring | Other Advisor | | Mariette Souppe<br>**Member:** Masters Project Committee |
| 2019 Spring | Other Advisor | | Devashish Purandare<br>**Member:** Masters Project Committee |
| 2019 Spring | Other Advisor | | Isaak Cherdak<br>**Member:** Masters Project Committee |
| 2019 Spring | Other Advisor | | Reza Nasirigerdeh<br>**Member:** Masters Project Committee |
| 2018 Spring | Other Advisor | | Austen Barker<br>**Member:** Masters Project Committee |
| 2018 Spring | Other Advisor | | James Byron<br>**Member:** Masters Thesis Committee |
| 2017 Fall - 2018 Spring | Primary Supervisor | 2018 | Lennart Oldenburg |
| 2018 Spring | Other Advisor | | Devashish Purendare<br>**Member:** Masters Project Committee |
| 2018 Spring | Other Advisor | | Kenneth Chang<br>**Member:** Masters Project Committee |
| 2018 Spring | Other Advisor | | Oceane Bell<br>**Member:** Masters Project Committee |
| 2018 Winter | Other Advisor | 2018 | Umang Sardesai<br>**Chair:** Masters Project Committee |
| 2016 Fall - 2017 Fall | Primary Supervisor | 2017 | Ashutosh Raina |
| 2017 Fall | Other Advisor | | Zheyuan Chen<br>**Member:** Masters Project Committee |
| 2017 Fall | Other Advisor | 2017 | Haiyu Yang<br>**Member:** Masters Project Committee |
| 2017 Fall | Other Advisor | 2017 | Bettie Jea<br>**Member:** Masters Project Committee |
| 2017 Fall | Other Advisor | 2018 | Pinglei Guo<br>**Chair:** Masters Project Committee |
| 2017 Fall | Other Advisor | 2017 | Nikhil Kini<br>**Member:** Masters Project Committee |
| 2017 Winter | Other Advisor | 2017 | Neha Ojha<br>**Member:** Masters Project Committee |
| 2017 Winter | Other Advisor | 2017 | Greeshma Swaminathan<br>**Member:** Masters Project Committee |
| 2017 Winter | Other Advisor | 2017 | Trivikram Bollempalli<br>**Member:** Masters Project Committee |
| 2016 Fall | Masters Project Supervisor | 2016 | Sanjana Maiya<br>**Chair:** Masters Project Committee |
| 2016 Fall | Other Advisor | 2017 | Abishek Grover<br>**Member:** Masters Thesis Committee |
| 2016 Spring | Other Advisor | | Kathryn Dahlgren<br>**Member:** Masters Thesis Committee |

## Undergraduate Students

| Dates | Relationship | Degree Year | Name and Activities |
|---|---|---|---|
| 2019 Spring | Other Advisor | 2020 | Evan West<br>**Member:** Undergraduate Thesis Committee |
| 2019 Spring | Other Advisor | 2019 | Matthew Gray<br>**Member:** Undergraduate Thesis Committee |
| 2017 Winter-2017 Fall | Primary Supervisor | 2017 | Asha Karim<br>**Chair:** Undergraduate Thesis Committee |

## COURSES TAUGHT

Courses in bold italics are those for which I either developed or significantly revised the curriculum.

### Undergraduate

Winter 2024 CSE13S: Computer Systems and C Programming
Winter 2023 CSE 138: Distributed Systems
Fall 2022 CSE 130: Principles of Computer System Design
Winter 2022 CSE 30: Programming Abstractions in Python
Fall 2021 CSE 130: Principles of Computer System Design
Fall 2020 CSE 138: Distributed Systems
Spring 2020 CSE 130: Principles of Computer System Design
Winter 2020 CSE 30: Abstractions in Python
Fall 2019 CSE 138: Distributed Systems
Winter 2019 CSE 5P: Introduction to Programming (in Python)
Winter 2018 CMPS 128: Distributed Systems
Fall 2017 CMPS 128: Distributed Systems
Winter 2017 CMPS 128: Distributed Systems
Spring 2016 ***CMPS 128: Distributed Systems***
Spring 2013 CS 194-017: Programming the Cloud (UC Berkeley)
Spring 2011 ***CS 194-017: Programming the Cloud*** (UC Berkeley)

### Graduate

Spring 2024 CSE290S: Discuss the Controversy
Spring 2023 CSE 232: Graduate Distributed Systems
Spring 2022 CSE 232: Graduate Distributed Systems
Winter 2021 ***CSE290S: Resilience in Giant-scale Systems***
Spring 2019 CSE 232: Graduate Distributed Systems
Spring 2018 CMPS 232: Graduate Distributed Systems
Fall 2016 ***CMPS 232: Graduate Distributed Systems***
Winter 2015 ***CMPS 290S: Advanced Topics in Computer Systems: Distributed Storage Systems and Programming Models***