College of Engineering Biographical Data

University of Illinois at Urbana-Champaign

Department (% appnt):	Computer Science	**Updated:**	July 2024

1. Name:	Xu, Tianyin	**Birth Date:**	6/20/1985	**Citizenship:**	China

2. Present Academic Rank:	Assistant Professor	**3. Tenure Status:**	Tenure-Track

4. Administrative Title:

5. Degrees *(field, institution, year awarded)*

1. Bachelor of Science, Nanjing University, 2007
2. Master of Engineering, Nanjing University, 2010
3. Ph.D., University of California San Diego, 2017

6. Academic Positions at U of I and elsewhere *(rank, institution, field, inclusive dates) (show % if you hold multiple appointments)*

1. Technical Staff, University of Goettingen, Institute of Computer Science, 9/2010-6/2011
2. Adjunct Assistant Professor (0%), Department of Computer Science, University of Illinois Urbana-Champaign, 8/2017-8/2018
3. Affiliate Assistant Professor (0%), Department of Electrical and Computer Engineering, University of Illinois Urbana-Champaign, 8/2022-Present
4. Assistant Professor, University of Illinois Urbana-Champaign, Department of Computer Science, 8/2018-Present

7. Professional Activities

a. Other Professional Employment *(title, organization, location, inclusive dates)*

1. Visiting Scientist, Facebook Inc., Menlo Park, CA, 10/2017 7/2018
2. Consultant Researcher, Facebook Inc., Menlo Park, CA, 8/2018 3/2022
3. Consultant Researcher, Microsoft Research, Bellevue, WA, 1/2023.1 6/2023

b. Major Consulting Activities *(past five years) (list organization and location)*

c. Professional Registrations *(field, location, date)*

8. Honors, Recognition, and Outstanding Achievements *(list year)*

a. Teaching

n	Award Name	Citation	Date Awarded
1	UIUC List of Teachers Ranked as Excellent (CS 598TXU)		Fall 2018
2	UIUC List of Teachers Ranked as Excellent (CS 598XU)		Spring 2019
3	UIUC List of Teachers Ranked as Excellent (CS 523)		Fall 2019
4	UIUC List of Teachers Ranked as Excellent (CS 523)		Fall 2020
5	UIUC List of Teachers Ranked as Outstanding (CS 591DS)		Fall 2021
6	UIUC List of Teachers Ranked as Excellent (for CS 523)		Spring 2023
7	UIUC List of Teachers Ranked as Excellent (for CS 591SN)		Fall 2023

b. Research

n	Award Name	Citation	Date Awarded
1	Best Paper Award of International Conference on Communications (ICC'09)		2009
2	Jay Lepreau Best Paper Award at OSDI'16		2016
3	Doctoral Award for Research, Computer Science and Engineering, University of California San Diego		2017

n	Award Name	Citation	Date Awarded
4	Best Demo Award at MobiCom'19		2019
5	Nomination for Best Paper and Best Student Paper at SC'20		2020
6	Best Paper Award at ASPLOS'20		2020
7	Facebook Distributed Systems Research Award		2020
8	Honorable Mention of IEEE Micro Top Picks		2021
9	SIGSOFT Distinguished Paper Award at ISSTA'21		2021
10	SIGSOFT Distinguished Paper Award at FSE'21		2021
11	Best Student Paper Award at SIGCOMM'21		2021
12	Facebook Academic of the Month		May 2021
13	Communications of the ACM (CACM) Research Highlight		2022
14	NSF CAREER Award		2022
15	Intel Rising Star Faculty Award		2022
16	Gilles Muller Best Artifact Award at EuroSys'23		2023
17	Dean's Award for Excellence in Research (Assistant Professor)		2024
18	C.W. Gear Outstanding Junior Faculty Award		2024
19	Jay Lepreau Best Paper Award at OSDI'24		2024

c. Public Service

d. Others

9. Web pages

n	Full website URL	Text for link
1	https://tianyin.github.io/	Tianyin Xu's homepage

FACTUAL INFORMATION

A. Resident Instruction and Continuing Education *(attach Teaching Activity reports, which covers 10 years)*

1. Resident Instruction *(verify the information on the appended page for sections in which you had primary responsibility; pencil in corrections)*

1. 2018 Fall, CS 598TXU: Reliability of Cloud-Scale Systems
2. 2019 Spring, CS 591SN: System and Networking Seminar
3. 2019 Spring, CS 598TXU: Reliable Software Systems
4. 2019 Fall, CS 591SE: Software Engineering Seminar
5. 2019 Fall, CS 591SN: System Reading Group
6. 2019 Fall, CS 523: Advanced Operating Systems
7. 2020 Spring, CS 591SE: Software Engineering Seminar
8. 2020 Spring, CS 591IG: System Reading Group
9. 2020 Spring, CS 423: Operating System Design
10. 2020 Fall, CS 591SE: Software Engineering Seminar
11. 2020 Fall, CS 591IG: Systems Reading Group
12. 2020 Fall, CS 523: Advanced Operating Systems
13. 2021 Spring, CS 591IG: System Reading Group
14. 2021 Spring, CS 591SE: Software Engineering Seminar
15. 2021 Fall, CS 523: Advanced Operating Systems
16. 2021 Fall, CS 591DS: Systems Reading Group
17. 2021 Fall, CS 591SE: Software Engineering Seminar
18. 2022 Spring, CS 598XU: Reliability of Cloud-Scale Systems
19. 2022 Spring, CS 591SN: Systems Reading Group
20. 2022 Spring, CS 591SE: Software Engineering Seminar
21. 2022 Fall, CS 423: Operating System Design
22. 2022 Fall, CS 591SN: Systems Reading Group
23. 2022 Fall, CS 591SE: Software Engineering Seminar
24. 2023 Spring, CS 523: Advanced Operating Systems
25. 2023 Spring, CS 591SN: Systems Reading Group
26. 2023 Fall, CS 423: Operating System Design

27. 2023 Fall, CS 591SN: Systems Reading Group
28. 2024 Spring, CS 591SN: Systems Reading Group
29. 2024 Spring, CS 523: Advanced Operating Systems

2. Continuing Education *(credit courses only) (year, course, # of students, delivery method)*

3. Other Instructional Activities *(prelim and final exams, course development, short courses, etc.)*

a. Prelim and Final Exams

n	Doctoral Candidate	Prelim Exam Date	Final Exam Date	(Co-)Chair	(Co-)Director
1	Santhosh Prabhu	5/24/2019	3/12/2020	Matthew Caesar	
2	Tarek Elgamal	4/9/2019	5/8/2020	Klara Nahrstedt	
3	Faria Kalim	10/10/2019	7/1/2020	Indranil Gupta	
4	Dimitrios Skarlatos	10/11/2019	8/19/2020	Josep Torrellas	
5	Wing Lam	11/24/2020	6/24/2021	Darko Marinov, Tao Xie	
6	Ali Kheradmand	11/3/2020	7/27/2021	Brighten Godfrey, Grigore Rosu	
7	Saurabh Jha	11/5/2020	10/14/2021	Ravishankar K. Iyer	
8	Atul Sandur	11/30/2020	1/6/2022	Gul Agha	
9	Apostolos Kokolis	11/8/2021	4/6/2022	Josep Torrellas	
10	Hsuan-Chi Kuo	11/29/2021	4/13/2022	Sibin Mohan	
11	Zhe Yang	9/17/2021	9/27/2022	Klara Nahrstedt	
12	Dan Plyukhin	1//13/2023	8/15/2023	Gul Agha	
13	Bingzhe Liu	11/15/2022	11/17/2023	Brighten Godfrey	
14	Hongpeng Guo	10/17/2022		Klara Nahrstedt	
15	Jie Huang	9/11/2023		Kevin Chen-Chuan Chang	
16	Tzu-Bin Yan	12/8/2023		Kirill Levchenko	
17	Runxiang (Sam) Cheng	4/3/2024		Darko Marinov	
18	Kuan-Yen Chou	4/16/2024		Matthew Caesar	
19	Houxiang Ji	5/3/2024		Nam Sung Kim	
20	Xudong Sun	5/17/2024		Tianyin Xu	

b. Course Development

c. Short Courses

4. Undergraduate Advising

a. Academic Advising *(student name, term, and activity description)*

1. YiFei Zhu, Fall 2020 - Spring 2021, Undergraduate research assistant, Joined Google
2. Wen Fan, Summer 2021, UIUC+ Summer Undergraduate Research in Software Engineering program, Joined Purdue University as a PhD student
3. Yicheng Lu, Summer 2021 - Fall 2021, CS REU program, Joined University of Illinois Urbana-Champaign as a MS student
4. Xinyu Lian, Summer 2021 - Fall 2021, CS REU program, Joined University of Illinois Urbana-Champaign as a MS student
5. Muhammad Taha, Summer 2022 - Fall 2022, UIUC+ Summer Undergraduate Research in Software Engineering program, Joined Purdue University as a MS student
6. Ze Yang, Summer 2022 - Fall 2022, CS REU program, Joined University of Illinois Urbana-Champaign as a MS student
7. Kunle Li, Summer 2022 - Fall 2022, CS REU program, Joined Carnegie Mellon University as a MS student
8. Yuxuan (Matt) Jiang, Summer 2022 - Fall 2022, CS REU program, Joined the University of Michigan as a PhD student
9. Feiran (Alex) Qin, Spring 2022, Undergraduate research assistant, Joined North Carolina State University as a PhD student
10. Fan Chung, Spring 2023, Undergraduate research assistant
11. Hao Wang, Summer 2023, UIUC+ Summer Undergraduate Research in Software Engineering program
12. Cheng Ding, Summer 2023 - Fall 2023, UIUC+ Summer Undergraduate Research in Software Engineering program
13. Saad Sher Alam, Summer 2023 - Fall 2023, UIUC+ Summer Undergraduate Research in Software Engineering program
14. Zicheng Ma, Summer 2023 - Fall 2023, CS REU program
15. Hongkun Zeng, Fall 2023 - Spring 2024, IIDAI URE program
16. Mark Zhang, Spring 2024, Undergraduate research assistant
17. Xinze (William) Zheng, Spring 2024, Undergraduate research assistant

b. Student Organizations *(list past five years)*

c. Design Teams *(past five years)*

d. Other *(individual projects, engineering open house, etc. past five years)*

B. Research, Creative, and Other Scholarly Activities

1. Publications

List publications in print or accepted, with authors' names ordered the way they appear on the publications. Provide inclusive page numbers for papers in proceedings and journals. Follow the outline given below for the organization of the list of publications. Within each category place items in chronological order.

(*) has undergone stringent editorial review by peers
(**) invited and carries with it prestige and recognition
(S) based on work as a student
(W) co-authored with students you supervise
(!) represents most important contribution of the past decade
(P) derived from PhD thesis
(D) co-authored with post-docs

a. Books Authored or Co-Authored

1. Original Editions

2. Revisions

b. Books Edited or Co-Edited

1. Original Editions

2. Revisions

c. Chapters in Books

d. Monographs *(longer than an article, but shorter than a book)*

e. Articles

1. Articles In Journals

1. (*)(S) Tianyin Xu and Yuanyuan Zhou, Systems Approaches to Tackling Configuration Errors: A Survey, ACM Computing Surveys, Volume 47, Number 4, Article 70, Jul. 2015.
2. (*)(S) Lei Jiao, Jun Li, Tianyin Xu, Wei Du, and Xiaoming Fu, Optimizing Cost for Online Social Networks on Geo-Distributed Clouds, IEEE/ACM Transactions on Networking, 24(1): 99-112, 2016.
3. (S) Tianyin Xu, Vineet Pandey, and Scott Klemmer, An HCI View of Configuration Problems, arXiv:1601.01747 [cs.HC], Jan. 2016.
4. (*)(S) Zhenhua Li, Yongfeng Zhang, Yunhao Liu, Tianyin Xu, Ennan Zhai, Yao Liu, Xiaobo Ma, Zhenyu Li, A Quantitative and Comparative Study of Network-Level Efficiency for Cloud Storage Services, ACM Transactions on Modeling and Performance Evaluation of Computing Systems, 4(1): 3:1-3:32, 2019.
5. Tianyin Xu and Owolabi Legunsen, Configuration Testing: Testing Configuration Values as Code and with Code, arXiv:1905.12195 [cs.SE], Jul. 2019.
6. (W) **Wenyu Wang**, Wei Yang, Tianyin Xu and Tao Xie, Speculating Ineffective UI Exploration via Trace Analysis, arXiv:2102.06377 [cs.SE], Feb. 2021.
7. (W) **Jinghao Jia**, **YiFei Zhu**, Dan Williams, Andrea Arcangeli, Claudio Canella, Hubertus Franke, Tobin Feldman-Fitzthum, Dimitrios Skarlatos, Daniel Gruss, and Tianyin Xu, Programmable System Call Security with eBPF, arXiv:2302.10366 [cs.OS], Feb. 2023.
8. (*) Hao Lin, Zhenhua Li, Di Gao, Yunhao Liu, Feng Qian, and Tianyin Xu, Trinity: High-Performance and Reliable Mobile Emulation through Graphics Projection, ACM Transactions on Computer Systems, Accepted on January 2024.

2. Articles In Conference Proceedings

1. (*)(S) Tianyin Xu, Jiaqi Zhang, Peng Huang, Jing Zheng, Tianwei Sheng, Ding Yuan, Yuanyuan Zhou, and Shankar Pasupathy, Do Not Blame Users for Misconfigurations, In Proceedings of the 24th ACM Symposium on Operating Systems Principles (SOSP '13), Nov. 3-6, 2013, Farmington, PA. (acceptance rate: 19.1%, 30 out of 157)

2. (*)(S) Jiaqi Zhang, Lakshminarayanan Renganarayana, Xiaolan Zhang, Niyu Ge, Vasanth Bala, Tianyin Xu, and Yuanyuan Zhou, EnCore: Exploiting System Environment and Correlation Information for Misconfiguration Detection, In Proceedings of the 19th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS '14), Mar. 1-5, 2014, Salt Lake City, UT. (acceptance rate: 22.6%, 49 out of 217)
3. (*)(S) Zhenhua Li, Cheng Jin, Tianyin Xu, Christo Wilson, Yao Liu, Linsong Cheng, Yunhao Liu, Yafei Dai, and Zhi-Li Zhang, Towards Network-level Efficiency for Cloud Storage Services, In Proceedings of the 14th ACM Internet Measurement Conference (IMC '14), Nov. 5-7, 2014, Vancouver, Canada. (acceptance rate: 31.1%, 32 out of 103)
4. (*)(S) Zhenhua Li, Christo Wilson, Tianyin Xu, Yao Liu, Zhen Lu, and Yinlong Wang, Offline Downloading in China: A Comparative Study, In Proceedings of the 15th ACM Internet Measurement Conference (IMC '15), Oct. 28-30, 2015, Tokyo, Japan. (acceptance rate: 32.3%, 31 out of 96)
5. (*)(S) Tianyin Xu, Long Jin, Xuepeng Fan, Yuanyuan Zhou, Shankar Pasupathy, and Rukma Talwadker, Hey, You Have Given Me Too Many Knobs! Understanding and Dealing with Over-Designed Configuration in System Software, In Proceedings of the 10th Joint Meeting of the European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE '15), Aug. 31-Sep. 4, 2015, Bergamo, Italy. (acceptance rate: 25.4%, 74 out of 291)
6. (*)(S) Zhenhua Li, Weiwei Wang, Tianyin Xu, Xin Zhong, Xiang-Yang Li, Yunhao Liu, Christo Wilson, and Ben Y. Zhao, Exploring Cross-Application Cellular Traffic Optimization with Baidu TrafficGuard, In Proceedings of the 13th USENIX Symposium on Networked Systems Design and Implementation (NSDI '16), Mar. 16-18, 2016, Santa Clara, CA. (acceptance rate: 20.0%, 45 out of 225)
7. (*)(S) Xinxin Jin, Peng Huang, Tianyin Xu, and Yuanyuan Zhou, NChecker: Saving Mobile App Developers from Network Disruptions, In Proceedings of the 11th ACM European Conference on Computer Systems (EuroSys '16), Apr. 18-21, 2016, London, UK. (acceptance rate: 21.1%, 38 out of 180)
8. (*)(S) Peng Huang, Tianyin Xu, Xinxin Jin, and Yuanyuan Zhou, DefDroid: Towards a More Defensive Mobile OS Against Disruptive App Behavior, In Proceedings of the 14th International Conference on Mobile Systems, Applications, and Services (MobiSys '16), Jun. 26-30, 2016, Singapore, Singapore. (acceptance rate: 15.7%, 31 out of 197)
9. (*)(S) Tianyin Xu, Xinxin Jin, Peng Huang, Yuanyuan Zhou, Shan Lu, Long Jin, and Shankar Pasupathy, Early Detection of Configuration Errors to Reduce Failure Damage, In Proceedings of the 12th USENIX Symposium on Operating Systems Design and Implementation (OSDI '16), Nov. 2-4, 2016, Savannah, GA. (acceptance rate: 18.1%, 47 out of 260)
10. (*)(S) Tianyin Xu, Han Min Naing, Le Lu, and Yuanyuan Zhou, How Do System Administrators Resolve Access-Denied Issues in the Real World? In Proceedings of the 35th Annual CHI Conference on Human Factors in Computing Systems (CHI '17), May 6-11, 2017, Denver, CO. (acceptance rate: 25.0%, 600 out of 2400)
11. (*) He Xiao, Zhenhua Li, Ennan Zhai, Tianyin Xu, Yang Li, Yonghe Wang, Quanlu Zhang, and Yao Liu, Towards Web-based Delta Synchronization for Cloud Storage Services, In Proceedings of the 16th USENIX Conference on File and Storage Technologies (FAST '18), Feb. 12-15, 2018, Oakland, CA. (acceptance rate: 16.5%, 23 out of 139)
12. (*) Tianyin Xu and Darko Marinov, Mining Container Image Repositories for Software Configurations and Beyond, In Proceedings of the 40th International Conference on Software Engineering, New Ideas and Emerging Results (ICSE '18, NIER), May 27-Jun. 3, 2018, Gothenburg, Sweden. (acceptance rate: 26.3%, 25 out of 95)
13. (*) Kaushik Veeraraghavan, Justin Meza, Scott Michelson, Sankaralingam Panneerselvam, Alex Gyori, David Chou, Sonia Margulis, Daniel Obenshain, Shruti Padmanabha, Ashish Shah, Yee Jiun Song, and Tianyin Xu, Maelstrom: Mitigating Datacenter-level Disasters by Draining Interdependent Traffic Safely and Efficiently, In Proceedings of the 13th USENIX Symposium on Operating Systems Design and Implementation (OSDI '18), Oct. 8-10, 2018, Carlsbad, CA. (acceptance rate: 18.3%, 47 out of 257)
14. (*) Justin Meza, Tianyin Xu, Kaushik Veeraraghavan, and Onur Mutlu, A Large-Scale Study of Data Center Network Reliability, In Proceedings of the 2018 Internet Measurement Conference (IMC '18), Oct. 31-Nov. 2, 2018, Boston, MA. (acceptance rate: 24.7%, 43 out of 174)
15. (*) Fan Dang, Zhenhua Li, Yunhao Liu, Ennan Zhai, Qi Alfred Chen, Tianyin Xu, Yan Chen, and Jingyu Yang. Understanding Fileless Attacks on Linux-based IoT Devices with HoneyCloud, In Proceedings of the 17th Annual International Conference on Mobile Systems, Applications, and Services (MobiSys '19), June 17-21, 2019, Seoul, Republic of Korea. (acceptance rate: 23.3%, 40 out of 172)
16. (*) Yuxuan Yan, Zhenhua Li, Qi Alfred Chen, Christo Wilson, Tianyin Xu, Ennan Zhai, Yong Li, and Yunhao Liu. Understanding and Detecting Overlay-based Android Malware at Market Scales, In Proceedings of the 17th Annual International Conference on Mobile Systems, Applications, and Services (MobiSys '19), June 17-21, 2019, Seoul, Republic of Korea. (acceptance rate: 23.3%, 40 out of 172)
17. (*) Ao Xiao, Yunhao Liu, Yang Li, Feng Qian, Zhenhua Li, Sen Bai, Yao Liu, Tianyin Xu, and Xianlong Xin. An In-depth Study of Commercial MVNO: Measurement and Optimization, In Proceedings of the 17th Annual International Conference on Mobile Systems, Applications, and Services (MobiSys '19), June 17-21, 2019, Seoul, Republic of Korea. (acceptance rate: 23.3%, 40 out of 172)
18. (*) Qifan Yang, Zhenhua Li, Yunhao Liu, Hai Long, Yuanchao Huang, Jiaming He, Tianyin Xu, and Ennan Zhai. Mobile Gaming on Personal Computers with Direct Android Emulation, In Proceedings of the 25th Annual International Conference on Mobile Computing and Networking (MobiCom '19), Oct. 21-25, 2019, Los Cabos, Mexico. (acceptance rate: 19.0%, 55 out of 190)
19. (*) David Chou, Tianyin Xu, Kaushik Veeraraghavan, Andy Newell, Sonia Margulis, Lin Xiao, Pol Mauri Ruiz, Justin Meza, Kiryong Ha, Shruti Padmanabha, Kevin Cole, and Dmitri Perelman, Taiji: Managing Global User Traffic for Large-Scale Heterogenous Internet Services at the Edge, In Proceedings of the 27th ACM Symposium on Operating Systems Principles (SOSP '19), Oct. 27-30, 2019, Huntsville, Ontario, Canada. (acceptance rate: 13.8%, 38 out of 276)
20. (*) Chengcheng Xiang, Yudong Wu, Bingyu Shen, Mingyao Shen, Haochen Huang, Tianyin Xu, Yuanyuan Zhou, Cindy Moore, Xinxin Jin, and Tianwei Sheng, Towards Continuous Access Control Validation and Forensics, In Proceedings of the 26th ACM Conference on Computer and Communications Security (CCS '19), London, UK, Nov. 11-15, 2019. (acceptance rate: 16.0%, 149 out of 934)

21. (*) Jian Chen, Minghao Zhao, Zhenhua Li, Ennan Zhai, Feng Qian, Hongyi Chen, and Yunhao Liu, and Tianyin Xu, Elastic Cuckoo Page Tables: Rethinking Virtual Memory Translation for Parallelism, In Proceedings of the 18th USENIX Conference on File and Storage Technologies (FAST '20), Santa Clara, CA, Feb. 24-27, 2020. (acceptance rate: 16.7%, 23 out of 138)
22. (*) Dimitrios Skarlatos, Apostolos Kokolis, Tianyin Xu, and Josep Torrellas, Elastic Cuckoo Page Tables: Rethinking Virtual Memory Translation for Parallelism, In Proceedings of the 25th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS '20), Virtual Event Mar. 16-20, 2020. (acceptance rate: 18.1%, 86 out of 476)
23. (*)(W) Hsuan-Chi Kuo, **Jianyan Chen**, Sibin Mohan, and Tianyin Xu, Set the Configuration for the Heart of the OS: On the Practicality of Operating System Kernel Debloating, In Proceedings of the 2020 ACM SIGMETRICS Conference (Sigmetrics '20), Virtual Event, June 8-12, 2020. (acceptance rate: 19.6%, 55 out of 280)
24. (*) Mingliang Li, Hao Lin, Cai Liu, Zhenhua Li, Feng Qian, Yunhao Liu, Nian Sun, Tianyin Xu, Aging or Glitching? Why Does Android Stop Responding and What Can We Do About It? In Proceedings of the 26th Annual International Conference on Mobile Computing and Networking (MobiCom '20), Virtual Event, Sep. 2020. (acceptance rate: 16.1%, 62 out of 384)
25. (*)(W) Dimitrios Skarlatos, **Qingrong Chen**, **Jianyan Chen**, Tianyin Xu, and Josep Torrellas, Draco: Architectural and Operating System Support for System Call Security, In Proceedings of the 53rd IEEE/ACM International Symposium on Microarchitecture (MICRO-53), Virtual Event, Oct. 2020. (acceptance rate: 19.3%, 82 out of 424)
26. (*) Saurabh Jha, Shengkun Cui, Subho Banerjee, Tianyin Xu, Jeremy Enos, Mike Showerman, Zbigniew T. Kalbarczyk, and Ravishankar K. Iyer, Understanding, Detecting, and Localizing Failures in High-Performance Storage Systems, In Proceedings of the International Conference for High-Performance Computing, Networking, Storage and Analysis (SC '20), Virtual Event, Nov. 2020. (acceptance rate: 17.9%, 68 out of 380)
27. (*)(W) **Qingrong Chen**, Teng Wang, Owolabi Legunsen, Shanshan Li, and Tianyin Xu, Understanding and Discovering Software Configuration Dependencies in Cloud and Datacenter Systems, In Proceedings of the 2020 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '20), Virtual Event, Nov. 2020. (acceptance rate: 28.1%, 101 out of 360)
28. (*)(W)(!) **Xudong Sun**, **Runxiang Cheng**, **Jianyan Chen**, **Elaine Ang**, Owolabi Legunsen, and Tianyin Xu, Testing Configuration Changes in Context to Prevent Production Failures, In Proceedings of the 14th USENIX Symposium on Operating Systems Design and Implementation (OSDI '20), Virtual Event, Nov. 2020. (acceptance rate: 17.5%, 70 out of 400)
29. (*) Xinlei Yang, Xianlong Wang, Zhenhua Li, Feng Qian, Liangyi Gong, Rui Miao, Yunhao Liu, and Tianyin Xu, Fast and Light Bandwidth Testing for Internet Users, In Proceedings of the 18th USENIX Symposium on Networked Systems Design and Implementation (NSDI '21), Virtual Event, Apr. 2021. (acceptance rate: 16.0%, 59 out of 369)
30. (*) Yuanliang Zhang, Haochen He, Owolabi Legunsen, Shanshan Li, Wei Dong, and Tianyin Xu, An Evolutionary Study of Configuration Design and Implementation in Cloud Systems, In Proceedings of the 43rd International Conference on Software Engineering (ICSE '21), Virtual Event, May 2021. (acceptance rate: 22.4%, 138 out of 615)
31. (*)(W) **Andrew Yoo**, Yuanli Wang, Ritesh Sinha, Shuai Mu, and Tianyin Xu, Fail-slow fault tolerance needs programming support, In Proceedings of the 18th Workshop on Hot Topics in Operating Systems (HotOS-XVIII), Virtual Event, May 2021. (acceptance rate: 26.5%, 30 out of 113)
32. (*)(W) **Xudong Sun**, Lalith Suresh, Aishwarya Ganesan, Ramnatthan Alagappan, Michael Gasch, **Lilia Tang**, and Tianyin Xu, Reasoning about modern datacenter infrastructures using partial histories, In Proceedings of the 18th Workshop on Hot Topics in Operating Systems (HotOS-XVIII), Virtual Event, May 2021. (acceptance rate: 26.5%, 30 out of 113)
33. (*)(W) **Runxiang Cheng**, Lingming Zhang, Darko Marinov, and Tianyin Xu, Test-Case Prioritization for Configuration Testing, In Proceedings of the 30th ACM SIGSOFT International Symposium on Software Testing and Analysis (ISSTA '21), Virtual Event, Jul. 2021. (acceptance rate: 23.3%, 51 out of 219)
34. (*) Yang Li, Hao Lin, Zhenhua Li, Liangyi Gong, Feng Qian, Yunhao Liu, Xianlong Xin, and Tianyin Xu, A Nationwide Study on Cellular Reliability: Measurement, Analysis, and Enhancements, In Proceedings of the 2020 Annual Conference of the ACM Special Interest Group on Data Communication (Sigcomm '21), Virtual Event, August 2021. (acceptance rate: 22.8%, 55 out of 241)
35. (*)(W) **Wenyu Wang**, Wei Yang, Tianyin Xu, and Tao Xie, Vet: Identifying and Avoiding UI Exploration Tarpits, In Proceedings of the 2021 ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE '21), Virtual Event, August 2021. (acceptance rate: 24.5%, 97 out of 396)
36. (*) Jialu Zhang, Ruzica Piskac, Ennan Zhai, and Tianyin Xu, Static Detection of Silent Misconfigurations with Deep Interaction Analysis, In Proceedings of the 36th ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA '21), Chicago, IL, October 2021. (acceptance rate: 34.6%, 71 out of 205)
37. (*) Muhammad Adil Inam, Wajih Ul Hassan, Ali Ahad, Adam Bates, Rashid Tahir, Tianyin Xu, and Fareed Zaffar, Forensic Analysis of Configuration-based Attacks, In Proceedings of the 29th Network and Distributed System Security Symposium (NDSS '22), San Diego, CA, Feb. 2022. (acceptance rate: 16.2%, 83 out of 512)
38. (*) Jovan Stojkovic, Dimitrios Skarlatos, Apostolos Kokolis, Tianyin Xu, and Josep Torrellas, Parallel Virtualized Memory Translation, In Proceedings of the 27th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS '22), Lausanne, Switzerland, Feb. 2022. (acceptance rate: 20.2%, 80 out of 397)
39. (*)(W) Hsuan-Chi Kuo, **Kai-Hsun Chen**, **Yicheng Lu**, Dan Williams, Sibin Mohan, and Tianyin Xu, Verified Programs Can Party: Optimizing Kernel Extensions via Post-Verification In-Kernel Merging, In Proceedings of the 17th European Conference on Computer Systems (EuroSys '22), Rennes, France, Apr. 2022. (acceptance rate: 26.0%, 42 out of 162)
40. (*)(W) **Xuhao Luo**, Weihai Shen, Shuai Mu, and Tianyin Xu, DepFast: Orchestrating Code of Quorum Systems, In Proceedings of the 2022 USENIX Annual Technical Conference (USENIX ATC '22), Carlsbad, CA, Jul. 2022. (acceptance rate: 16.5%, 64 out of 394)
41. (*) Di Gao, Hao Lin, Zhenhua Li, Chengen Huang, Yunhao Liu, Feng Qian, Liangyi Gong, and Tianyin Xu, Trinity: High-Performance Mobile Emulation through Graphics Projection, In Proceedings of the 16th USENIX Symposium on Operating Systems Design and Implementation (OSDI '22), Carlsbad, CA, Jul. 2022. (acceptance rate: 19.5%, 49 out of 251)
42. (*)(W)(!) **Xudong Sun**, **Wenqing Luo**, **Jiawei Tyler Gu**, Aishwarya Ganesan, Ramnatthan Alagappan, Michael Gasch, Lalith Suresh, and Tianyin Xu, Automatic Reliability Testing For Cluster Management Controllers, In Proceedings of the 16th USENIX

Symposium on Operating Systems Design and Implementation (OSDI '22), Carlsbad, CA, Jul. 2022. (acceptance rate: 19.5%, 49 out of 251)

43. (*) Xinlei Yang, Hao Lin, Zhenhua Li, Feng Qian, Xingyao Li, Zhiming He, Xudong Wu, Xianlong Wang, Yunhao Liu, Zhi Liao, Daqiang Hu, and Tianyin Xu, Mobile Access Bandwidth in Practice: Measurement, Analysis, and Implications, In Proceedings of the 2022 Annual Conference of the ACM Special Interest Group on Data Communication (Sigcomm '22), Amsterdam, Netherlands, August 2022. (acceptance rate: 19.7%, 55 out of 279)
44. (*) Jovan Stojkovic, Namrata Mantri, Dimitrios Skarlatos, Tianyin Xu, and Josep Torrellas, Memory-Efficient Hashed Page Tables, In Proceedings of the 29th IEEE International Symposium on High-Performance Computer Architecture (HPCA-29), Montreal, QC, Canada, Feb 2023. (acceptance rate: 25.0%, 91 out of 364)
45. (*) Jovan Stojkovic, Tianyin Xu, Hubertus Franke, and Josep Torrellas, SpecFaaS: Accelerating Serverless Applications with Speculative Function Execution, In Proceedings of the 29th IEEE International Symposium on High-Performance Computer Architecture (HPCA-29), Montreal, QC, Canada, Feb 2023. (acceptance rate: 25.0%, 91 out of 364)
46. (*) Xinlei Yang, Wei Liu, Hao Lin, Zhenhua Li, Feng Qian, Xianlong Wang, Yunhao Liu, and Tianyin Xu, Visual-Aware Testing and Debugging for Web Performance Optimization, In Proceedings of the 32th ACM Web Conference (WWW '23), Austin, Texas, Apr. 2023. (acceptance rate: 19.2%, 365 out of 1900)
47. (*)(W)(!) **Yinfang Chen**, **Xudong Sun**, Suman Nath, Ze Yang, and Tianyin Xu, Push-Button Reliability Testing for Cloud-Backed Applications with Rainmaker, In Proceedings of the 20th USENIX Symposium on Networked Systems Design and Implementation (NSDI '23), Boston, MA, April 2023. (acceptance rate: 17.1%, 96 out of 560)
48. (*)(W) **Shuai Wang**, **Xinyu Lian**, Darko Marinov, and Tianyin Xu, Test Selection for Unified Regression Testing, In Proceedings of the 45th IEEE/ACM International Conference on Software Engineering (ICSE '23), Melbourne, Australia, May 2023. (acceptance rate: 26.3%, 209 out of 796)
49. (*)(W) **Lilia Tang**, Chaitanya Bhandari, Yongle Zhang, Anna Karanika, Shuyang Ji, Indranil Gupta, and Tianyin Xu, Fail through the Cracks: Cross-System Interaction Failures in Modern Cloud Systems, In Proceedings of the 18th European Conference on Computer Systems (EuroSys '23), Rome, Italy, May 2023. (acceptance rate: 16.2%, 54 out of 323)
50. (*) Jovan Stojkovic, Tianyin Xu, Hubertus Franke, and Josep Torrellas, MXFaaS: Resource Sharing in Serverless Environments for Parallelism and Efficiency, In Proceedings of the 50th Annual International Symposium on Computer Architecture (ISCA '23), Orlando, FL, June 2023. (acceptance rate: 21.2%, 79 out of 372)
51. (*)(W) **Jinghao Jia**, Raj Sahu, Adam Oswald, Dan Williams, Michael V. Le, and Tianyin Xu, Kernel extension verification is untenable, In Proceedings of the 19th Workshop on Hot Topics in Operating Systems (HotOS-XIX), Providence, RI, June 2023. (acceptance rate: 26.5%, 31 out of 117)
52. (*) Xiang (Jenny) Ren, Sitao Wang, Zhuqi Jin, David Lion, Adrian Chiu, Tianyin Xu, and Ding Yuan, Relational Debugging Pinpointing Root Causes of Performance Problems, In Proceedings of the 17th USENIX Symposium on Operating Systems Design and Implementation (OSDI '23), Boston, MA, July 2023. (acceptance rate: 16.9%, 50 out of 255)
53. (*)(W) Weiwei Jia, **Jiyuan Zhang**, Jianchen Shan, Yiming Du, Xiaoning Ding, and Tianyin Xu, HugeGPT: Storing Guest Page Tables on Host Huge Pages to Accelerate Address Translation, In Proceedings of the 32nd International Conference on Parallel Architectures and Compilation Techniques (PACT '23), Vienna, Austria, Oct. 2023. (acceptance rate: 37.9%, 25 out of 66)
54. (*) Runxiang Cheng, Chris Cai, Selman Yilmaz, Rahul Mitra, Malay Bag, Mrinmoy Ghosh, and Tianyin Xu, Towards GPU Memory Efficiency for Distributed Training at Scale, In Proceedings of the 14th ACM Symposium on Cloud Computing (SoCC '23), Santa Cruz, CA, Oct. 2023. (acceptance rate: 30.1%, 40 out of 133)
55. (*) Hao Lin, Jiaxing Qiu, HongyiWang, Zhenhua Li, Liangyi Gong, Di Gao, Yunhao Liu, Feng Qian, Zhao Zhang, Ping Yang, and Tianyin Xu, Virtual Device Farms for Mobile App Testing at Scale: A Pursuit for Fidelity, Efficiency, and Accessibility, In Proceedings of the 29th Annual International Conference on Mobile Computing and Networking (MobiCom '23), Madrid, Spain, Oct. 2023. (acceptance rate: 24.4%, 92/377)
56. (*) Yan Sun, Yifan Yuan, Zeduo Yu, Chihun Song, Reese Kuper, Jinghan Huang, Houxiang Ji, Siddharth Agarwal, Jiaqi Lou, Ipoom Jeong, Ren Wang, Jung Ho Ahn, Tianyin Xu, and Nam Sung Kim, Demystifying CXL Memory with Genuine CXL-Ready Systems and Devices, In Proceedings of the 56th IEEE/ACM International Symposium on Microarchitecture (MICRO-56), Toronto, Canada, Oct. 2023. (acceptance rate: 23.8%, 101 out of 424)
57. (*)(W)(!) **Jiawei Tyler Gu**, **Xudong Sun**, **Yuxuan Jiang**, Chen Wang, Mandana Vaziri, Owolabi Legunsen, and Tianyin Xu, Automatic Testing for Correct Operations of Cloud Systems, In Proceedings of the 29th ACM Symposium on Operating Systems Principles (SOSP '23), Koblenz, Germany, Oct. 2023. (acceptance rate: 18.8%, 43 out of 229)
58. (*)(W)(D) **Jiyuan Zhang**,Weiwei Jia, **Siyuan Chai**, **Peizhe Liu**, **Jongyul Kim**, and Tianyin Xu, Direct Memory Translation for Virtualized Clouds, In Proceedings of the 29th International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS '24), San Diego, USA, Apr. 2024. (acceptance rate: 11.5%, 39 out of 340)
59. (*) Jovan Stojkovic, Nikoleta Iliakopoulou, Tianyin Xu, Hubertus Franke, and Josep Torrellas, EcoFaaS: Rethinking the Design of Serverless Environments for Energy Efficiency, In Proceedings of the the 51st International Symposium on Computer Architecture (ISCA'24), Buenos Aires, Argentina, Jun. 2024. (acceptance rate: 19.6%, 83 out of 423)
60. (*)(W) **Shuai Wang**, Xinyu Lian, Qingyu Li, Darko Marinov, and Tianyin Xu, Ctest4J: A Practical Configuration Testing Framework for Java, In Proceedings of the 23rd ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE'24), Demonstration Track, Porto de Galinhas, Brazil, Jul. 2024. (acceptance rate: 52.4%, 22 out of 42)
61. (*)(W) **Jinghao Jia**, Michael Le, Salman Ahmed, Dan Williams, Hani Jamjoom, and Tianyin Xu, Fast (Trapless) Kernel Probes Everywhere, In Proceedings of the 2024 USENIX Annual Technical Conference (USENIX ATC'24), Santa Clara, CA, Jul. 2024. (acceptance: 15.8%, 77 out of 488)
62. (*)(W)(!) **Xudong Sun**, **Wenjie Ma**, **Jiawei Tyler Gu**, **Zicheng Ma**, Tej Chajed, Jon Howell, Andrea Lattuada, Oded Padon, Lalith Suresh, Adriana Szekeres, and Tianyin Xu, Anvil: Verifying Liveness of Cluster Management Controllers, In Proceedings of the 18th USENIX Symposium on Operating Systems Design and Implementation (OSDI'24), Santa Clara, CA, Jul. 2024. (acceptance: 15.6%,

44 out of 282)

3. Abstracts *(in print or accepted)*

4. Book Reviews *(in print or accepted)*

5. Refereed Conference Papers and Presentations

f. Pending Publications

g.i Invited Lectures and Invited Conference Presentations Since Last Promotion. *For candidates for promotion to Professor, a full (career) list of events may be provided (in other section) or, in the interest of brevity, a list of only those events since the last promotion may be provided.*

g.ii Other Invited Lectures and Invited Conference Presentations

n	Title	Conference	Location	Year
1	Do not blame users for misconfigurations	NetApp Inc.	Sunnyvale, CA	9/6/2012
2	Do not blame users for misconfigurations	Symposium on Operating Systems Principles	Farmington, PA	11/5/2013
3	Proactive methods in dealing with datacenter misconfigurations	CNS Review	San Diego, CA	8/8/2013
4	Hey, you have given me too many knobs!	ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering	Bergamo, Italy	9/3/2015
5	Early detection of configuration errors to reduce failure damage	NetApp Inc.	Sunnyvale, CA	3/1/2016
6	Proactive methods in dealing with datacenter misconfigurations	Microsoft Research	Redmond, WA	3/4/2016
7	Exploring cross-app cellular traffic optimization w/ Baidu TrafficGuard	USENIX Symposium on Networked Systems Design and Implementation	Santa Clara, CA	3/18/2016
8	Early detection of configuration errors to reduce failure damage	CNS Review	San Diego, CA	4/20/2016
9	Early detection of configuration errors to reduce failure damage	USENIX Symposium on Operating Systems Design and Implementation	Savannah, GA	11/4/2016
10	Hardening cloud and datacenter systems against configuration errors	University of California Santa Cruz	Santa Cruz, CA	2/17/2017
11	Hardening cloud and datacenter systems against configuration errors	New York University	New York, NY	2/22/2017
12	Hardening cloud and datacenter systems against configuration errors	Pennsylvania State University	State College, PA	2/24/2017
13	Hardening cloud and datacenter systems against configuration errors	University of California Santa Barbara	Santa Barbara, CA	3/2/2017
14	Hardening cloud and datacenter systems against configuration errors	Georgia Institute of Technology	Atlanta, GA	3/8/2017
15	Hardening cloud and datacenter systems against configuration errors	University of Illinois at Urbana Champaign	Champaign, IL	3/13/2017
16	Hardening cloud and datacenter systems against configuration errors	University of Waterloo	Waterloo ON Canada	3/16/2017
17	Hardening cloud and datacenter systems against configuration errors	Max Planck Institute for Software Systems	Kaiserslautern, Germany	3/24/2017
18	Hardening cloud and datacenter systems against configuration errors	University of California Los Angeles	Los Angeles CA	4/25/2017
19	Hardening cloud and datacenter systems against configuration errors	Salesforce Inc.	San Francisco, CA	5/9/2018
20	Continuous Configuration Testing	Facebook Core Systems Faculty Speaker Series	Facebook	9/29/2021
21	Continuous Configuration Testing	Workshop on Configuration Languages	Zoom	10/18/2021
22	Continuous Configuration Testing	International Symposium on High Confidence Software	Peking University	12/12/2021
23	Configuration Validation and Testing for Cloud Systems: Research and Practice	Dagstuhl Seminar 23082 (Resilient Software Configuration and Infrastructure Code Analysis)	Dagstuhl, Germany	2/2023

n	Title	Conference	Location	Year
24	Correctness and Fault Tolerance of Kubernetes Operators	Dagstuhl Seminar 23082 (Resilient Software Configuration and Infrastructure Code Analysis)	Dagstuhl, Germany	2/2023
25	Designing an Inclusive OS Interface for Virtual Memory Translation	Intel ArchFest	Intel	9/2023
26	Correctness and Fault Tolerance of Kubernetes Controllers	MPI-SWS Systems Seminar	University of Saarland, Germany	10/2023
27	Cross-System Interaction Failures: Don t Fail through the Cracks	SREcon24 Americas	San Francisco, CA	3/2024

h. Other Publications *(patents, bulletins or reports, magazine articles, etc.)*

1. Patents

2. Bulletins

3. Magazine Articles

1. (**)(W) Hsuan-Chi Kuo, **Jianyan Chen**, Sibin Mohan, and Tianyin Xu, Set the Configuration for the Heart of the OS: On the Practicality of Operating System Kernel Debloating, Communications of the ACM, Vol. 65, No. 5, pp. 101-109, May 2022.
2. (**) Hao Lin, Jiaxing Qiu, Hongyi Wang, Zhenhua Li, Liangyi Gong, Di Gao, Yunhao Liu, Feng Qian, Zhao Zhang, Ping Yang, and Tianyin Xu, Take the Blue Pill: Pursuing Mobile App Testing Fidelity, Efficiency, and Accessibility with Virtual Device Farms, GetMobile: Mobile Computing and Communications, Vol. 28, Issue 1, pp 5 9, May 2024.
3. (**)(W) **Xudong Sun**, **Jiawei Tyler Gu**, Cody Rivera, Tej Chajed, Jon Howell, Andrea Lattuada, Oded Padon, Lalith Suresh, Adriana Szekeres, and Tianyin Xu, Anvil: Building Kubernetes Controllers That Do Not Break, USENIX ;login:, Jun. 2024.
4. (**)(W) **Jiawei Tyler Gu**, **Xudong Sun**, **Zhen Tang**, Chen Wang, Owolabi Legunsen, and Tianyin Xu, Acto: Push-Button End-to-End Testing for Operation Correctness of Kubernetes Operators, USENIX ;login:, 2024. (Invited for publication)

4. Reports

2. Grants, contracts and gifts *(in chronological order up to past ten years)*

a.i. Research Grants Received Since Last Promotion at Illinois.

a.ii. Other Research Grants Received at Illinois

n	#PI's and lead PI if not this prof	Source of Funds	Years (Inclusive)	Total Funding	Funds Allocated to this prof	Brief Title or Description
1	1	NSF	2018-2022	500,000	500,000	SHF: Small: Science and Tools for Intelligent Developer Testing
2		University of Illinois, Office of Undergraduate Research	2020-2021	2,000	2,000	Operating Support for Container Security
3	1	Facebook	2020-2021	50,000	50,000	Facebook Distributed Systems Research Award
4	5, Ravishankar Iyer	NSF	2020-2021	250,000	50,000	CCF: PPoSS: Planning: Inflight Analytics to Control Large-Scale Heterogeneous Systems
5	1	IBM-Illinois Center for Cognitive Computing Systems Research	2020-2021	115,600	115,600	Operating System Support for System Call Security
6	1	Google	2020-2021	5,000	5,000	Google Cloud Platform Research Credits
7	2, Josep Torrellas	NSF	2020-2023	850,000	425,000	CNS Core: Medium: Rethinking Architecture and Operating Systems for Modern Virtualization Technologies
8	1	Microsoft	2020-2023	40,000	40,000	Microsoft Azure Sponsorship
9	1	NSF	2021-2024	250,000	250,000	CNS Core: Small: A new framework for building fail-slow fault-tolerant distributed systems
10	1	VMware	2021-2025	250,000	250,000	The VMware University Research Grant: Automatic Correctness of Distributed Systems

n	#PI's and lead PI if not this prof	Source of Funds	Years (Inclusive)	Total Funding	Funds Allocated to this prof	Brief Title or Description
11	3, Josep Torrellas	Intel	20222-2025	200,000	30,000	Intel TSA: 2030 Server Architecture for Terabyte-Scale Heterogeneous Computing and Memory
12	2, Josep Torrellas	IBM-Illinois Discovery Accelerator Institute	2022-2024	460,800	230,400	Operating System Support for Container Security and Processor Design for Containers
13	1	IBM-Illinois Discovery Accelerator Institute	2022-2024	229,300	229,300	Testing and Analysis of Custom Operators for Cloud Infrastructures
14	1	NSF	2022-2027	560,600	560,600	CAREER: Rethinking Configuration Management for Cloud and Datacenter Systems
15	1	Facebook	2021-2022	50,000	50,000	Facebook Core Systems Faculty Research Gift
16	2, Josep Torrellas	IBM-Illinois Discovery Accelerator Institute	2023-2025	252,000	126,000	High-Performance and Energy-Efficient Platform Support of Serverless Environments for General-Purpose and ML Applications
17	1	IBM-Illinois Discovery Accelerator Institute	2023-2025	176,900	176,900	A Safe and Expressive Infrastructure for OS Kernel Extensions
18	1	Intel	2023	50,000	50,000	Intel Rising Star Faculty Award
19	1	IBM-Illinois Discovery Accelerator Institute	2024	192,600	192,600	Open-sourcing the Acto Project (A Fully Automated End-to-End Testing Framework for Kubernetes Operators) and Empowering a Research Community

b.i. Instructional Grants Received Since Last Promotion at Illinois

b.ii. Other Instructional Grants Received at Illinois

3. Areas of Research *(brief description, key words are adequate)*

1. Computer Systems
2. Cloud Computing
3. Software Engineering

4. Graduate Thesis Research Advising *(list co-advisor, if any)*

a. M.S. Thesis Students *(name and year granted or anticipated)*

n	Student Name	Year Graduated	Thesis Title	Placement
1	Ran (Elaine) Ang	2019	Reusing Software Tests for Configuration Testing: A Case Study of the Hadoop Project	Google LLC
2	Qingrong Chen	2020	Understanding and Discovering Software Configuration Dependencies in Cloud and Datacenter Systems	Facebook, Inc.
3	Andrew B. Yoo	2021	A Fail-Slow Tolerant Raft Implementation	Whova Inc.
4	Jianyan Chen	2021	A Pilot Study of Cross-System Failures	Trend Micro Inc.
5	Parth Thakkar	2023	Exploring the Design Space of AI-based Code Completion Engines	Meta Platforms, Inc.
6	Wenqing Luo	2023	Towards Application Recoverability atop Cloud-Native Storage	Apple Inc.
7	Jiyuan Zhang	2024	Direct Memory Translation for Virtualized Clouds	PhD program, University of Illinois at Urbana-Champaign
8	Xinyu Lian	2024	Configuration Validation with Large Language Models	PhD program, University of Illinois Urbana-Champaign
9	Anna Mazhar	2024	High-fidelity Software Testing for Cloud-based Applications	PhD program, Cornell University
10	Pratik R. Sampat	2024	Operating System Support of CPU Entitlement for Performance Efficiency in the Cloud	Advanced Micro Devices, Inc. (AMD)

b. Ph.D. Thesis Students *(name and year granted or anticipated)*

n	Student Name	Year Graduated, if not yet graduated add expected date and prelim date if taken	Thesis Title	Placement
1	Wenyu Wang	2022	Empowering Mobile UI Test Generation Tools With External Automated Support	Meta Platforms, Inc.
2	Xudong Sun	2025	Testing and Verification of Cloud Infrastructure Systems	
3	Jinghao Jia	2025	(Tentative) Rethinking the Programmability of Operating System Kernel Extensions	
4	Siyuan Chai	2026	(Tentative) An Extensible Operating System Interface for Virtual Memory Translation Architectures	
5	Shuai Wang	2026	(Tentative) Effective Configuration Testing Techniques	
6	Yinfang Chen	2026	(Tentative) Testing and Troubleshooting for Cloud and Serverless Applications	
7	Jiawei (Tyler) Gu	2026	(Tentative) Push-Button End-to-End Testing for Operation Correctness of Cloud System Management	

5. Editorships of Journals or Other Learned Publications *(list year)*

1. Editor, SIGOPS Blog, 2020-Present
2. Area chair, Journal of Systems Research, 2020-Present

6. Post-doctoral Associates and Visiting Scientists *(>3 months stay in the past three years) (list name, year(s), country of origin, permanent employer)*

n	Name	Title (percent time)	Country of Origin	Permanent Employer	Years
1	Yuanliang Zhang	Visiting PhD Student	China	Assistant Professor, National University of Defense Technology	2019-2020
2	Chaitanya B. Bhandari	Research Scholar	India	TigerBeetle, Inc.	2021-2022
3	Hao Lin	Visiting PhD Student	China	PhD Student, Tsinghua University	2023-2024
4	Wenjie Ma	Research Scholar	China	PhD Student, University of California, Berkeley	2023-2024
5	Jongyul Kim	Postdoctoral Research Fellow	Korea	N/A	2023-2025

7. Other Scholarly Activities in the past five years *(conferences organized or chaired, unpublished presentations, etc.)*

a. Conferences Organized or Chaired

1. Sponsors Chair, EuroSys, 2021
2. Virtual Platform Chair, SOSP 2021

b. Unpublished Presentations

c. Other Scholarly Activities

C. Service

1. Professional Societies *(list membership; office held, with dates; major committees or boards)*

2. University *(department, college and campus committees, administration, etc. for past five years)*

a. Department

1. UIUC CS Undergraduate Study Committee, 2018-2019
2. UIUC CS TT Faculty Recruiting Committee, 2019-2020
3. UIUC CS CARES Committee, 2020-Present
4. UIUC CS Advisory Committee, 2020-Present
5. UIUC CS TT Faculty Recruiting Committee, 2021-2022

b. College

c. Campus

3. Federal and State *(government commissions or panels, community, industrial extension, etc.)*

4. Other Outside Service

1. Technical Program Committee, IEEE International Conference on Network Protocols (ICNP) PhD Forum, 2013
2. Technical Program Committee, IEEE International Conference on Network Protocols (ICNP) PhD Forum, 2014
3. Academic Review Committee, USENIX Large Installation System Administration Conference (LISA), 2015
4. Technical Program Committee, ACM Symposium on Operating Systems Principles (SOSP) Student Research Competition, 2017
5. Technical Program Committee, IEEE International Conference on Distributed Computing Systems (ICDCS), 2018
6. Technical Program Committee, ACM European Conference on Computer Systems (EuroSys) Doctoral Workshop, 2018
7. Technical Program Committee, International Workshop on Edge Systems, Analytics and Networking (EdgeSys), 2018
8. Technical Program Committee, ACM Symposium on Operating Systems Principles (SOSP), 2019
9. Technical Program Committee, ACM SIGOPS Asia-Pacific Workshop on Systems (APSys), 2019
10. Technical Program Committee, Workshop on Software Engineering for Infrastructure and Configuration Code (SEConfig), 2019
11. Technical Program Committee, International Workshop on Edge Systems, Analytics and Networking (EdgeSys), 2019
12. Technical Program Committee, USENIX Symposium on Operating Systems Design and Implementation (OSDI), 2020
13. Technical Program Committee, ACM International Conference on Mobile Systems, Applications, and Services (MobiSys), 2020
14. Technical Program Committee, ACM Symposium on the Foundations of Software Engineering (FSE) Tool/Demo, 2020
15. Technical Program Committee, ACM SIGOPS Hot Topics in Operating Systems (HotOS), 2021
16. Technical Program Committee, International Conference on Software Engineering (ICSE), 2021
17. Technical Program Committee, SIGMETRICS Student Research Competition, 2021
18. Technical Program Committee, ACM SIGMETRICS Conference, 2022
19. Technical Program Committee, ACM International Systems and Storage Conference (SYSTOR), 2022
20. Technical Program Committee, International Workshop on Edge Systems, Analytics and Networking (EdgeSys), 2022
21. Technical Program Committee, USENIX Symposium on Operating Systems Design and Implementation (OSDI), 2023
22. Technical Program Committee, USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2023
23. Technical Program Committee, Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), 2023
24. Technical Program Committee, ACM SIGMETRICS Conference, 2023
25. Technical Program Committee, Workshop on eBPF and Kernel Extensions (eBPF), 2024
26. Technical Program Committee, Workshop on Serverless Systems, Applications and Methodologies (SESAME), 2024
27. Technical Program Committee, USENIX Annual Technical Conference (USENIX ATC), 2024
28. Technical Program Committee, ACM European Conference on Computer Systems (EuroSys), 2024
29. Technical External Review Committee, IEEE/ACM International Symposium on Microarchitecture (MICRO), 2024
30. Technical Program Committee, ACM/IEEE Symposium on Edge Computing (SEC), 2024
31. Technical Program Committee, IEEE International Symposium on High-Performance Computer Architecture (HPCA), 2025
32. Technical Program Committee, USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2025
33. Technical Program Committee, International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS), 2025
34. Technical Program Committee, USENIX Symposium on Operating Systems Design and Implementation (OSDI), 2025 (Invited)
35. Reviewer, IEEE Transactions on Software Engineering
36. Reviewer, IEEE Transactions on Reliability
37. Reviewer, IEEE Transactions on Cloud Computing
38. Reviewer, IEEE Transactions on Parallel and Distributed Systems
39. Reviewer, Elsevier Journal of Reliability Engineering and System Safety
40. Reviewer, Springer Journal of Cloud Computing
41. Reviewer, IEEE Transactions on Network and Service Management
42. Reviewer, IEEE Transactions on Mobile Computing
43. Reviewer, IEEE Transactions on Computers

D. Improvement Activities *(list any specific programs in which you have participated it improve teaching and professional competence)*

E. Professional Highlights

F. Biography, Statements and Updates

Tianyin Xu is an Assistant Professor of Computer Science at the University of Illinois at Urbana-Champaign (UIUC). His research focuses on building reliable computer systems that empower next-generation cloud and datacenter computing. He has been in the UIUC List of Teachers Ranked as Excellent for seven times since he joined the CS department in 2018. His work receives Jay Lepreau Best Paper Awards at OSDI 2024 and 2016, a Best Paper Award at ASPLOS 2020, a Best Student Paper Award at SIGCOMM 2021, two SIGSOFT Distinguished Paper Awards at ISSTA 2021 and FSE 2021, a Gilles Muller Best Artifact Award at EuroSys 2023, and a CACM Research Highlight. He is also a recipient of the C.W. Gear Outstanding Junior Faculty Award, a Dean's Award for Excellence in Research, NSF CAREER Award, an Intel Rising Star Faculty Award, and a Facebook Distributed Systems Research Award. More

information can be found on his webpage: https://tianyin.github.io/.

G. Diversity, Equity, Inclusion, or Access

List any specific activities participated that promote or contribute to improving Diversity, Equity, Inclusion, Access, Climate, or Culture through your research, teaching, service, outreach, or public engagement..

(@) Department Activity
(%) College Activity
(^) Campus Activity
(=) UI System Activity
(!) Represents most important activity
(@@) External Local Activity
(@%) State Activity
(^^) Federal Activity
(==) Professional Society Activity

1. INDIVIDUAL impacts

a. Undergraduate

b. Graduate

c. Postdoctoral or Professional Scholar

2. PROGRAMMATIC impacts

3. INSTITUTIONAL impacts

4. CLIMATE and CULTURE impacts

5. TRAINING

6. DIVERSITY STATEMENT