Tanakorn Leesatapornwongsa

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Education

2012 - 2017 **University of Chicago**, Chicago, IL, USA
Ph.D. in Computer Sciences
Advisor: Prof. Haryadi S. Gunawi and Prof. Shan Lu

2005 - 2009 **Chulalongkorn University**, Bangkok, Thailand
B.Eng. in Computer Engineering

Research Interests

Areas Distributed Systems, Cloud Computing, Storage Systems, Ubiquitous Computing, and Edge Computing.
Focuses System Dependability and System Design.

Work Experiences

May 2019 - Present **Research Software Development Engineer**, Microsoft Research, Redmond, WA, USA
Working on "*reliability testing*" project

Aug 2017 - May 2019 **Senior Research Engineer**, Samsung Research America, Mountain View, CA, USA
Worked on "*programming abstraction for reliable smart-home applications*" project

2013 - 2017 **Research Assistant**, University of Chicago, Chicago, IL, USA
Worked on "*improving the dependability of distributed systems and cloud systems*" topic with Prof. Haryadi S. Gunawi in UCARE Group

Jun 2016 - Aug 2016 **Research Intern**, Microsoft Research, Redmond, WA, USA
Worked on "*reliability testing for Azure applications*" project.

Jun 2014 - Aug 2014 **Intern**, NetApp, Inc., Sunnyvale, CA, USA
Worked on "*distributed system scalability checking*" project in Advanced Technology Group (ATG)

Oct 2012 - Mar 2013 **Teaching Assistant**, University of Chicago, Chicago, IL, USA
TA in Computer Architecture and Mobile Computing courses

2009 - 2012 **Platform Engineer**, Wavify Inc., Bangkok, Thailand
- Built P2P data synchronization framework for mobile platform
- Built file offloading network-attached storage (NAS) for high workload mail server

Publications

Aritra Sengupta, Tanakorn Leesatapornwongsa, Masoud Saeida Ardekani, and Cesar A. Stuardo. **Transactuations: Where Transactions Meet the Physical World**. In *Proceedings of the USENIX Annual Technical Conference (ATC)*, 2019

Cesar A. Stuardo, Tanakorn Leesatapornwongsa, Riza O. Suminto, Huan Ke, Jeffrey F. Lukman, Wei-Chiu Chuang, Shan Lu, and Haryadi S. Gunawi. **ScaleCheck: A Single-Machine Approach for Discovering Scalability Bugs in Large Distributed Systems**. In *Proceedings of the 17th USENIX Conference on File and Storage Technologies (FAST)*, 2019

Jeffrey F. Lukman, Huan Ke, Cesar A. Stuardo, Riza O. Suminto, Dikaimin Simon, Daniar H. Kurniawan, Satria Priambada, Chen Tian, Feng Ye, Tanakorn Leesatapornwongsa, Aarti Gupta, Shan Lu, and Haryadi S. Gunawi. **FlyMC: Highly Scalable Testing for Complex Interleavings in Cloud Systems**. In *Proceedings of the 14th edition of EuroSys (**EuroSys**), 2019*

Tanakorn Leesatapornwongsa, Cesar A. Stuardo, Riza O. Suminto, Huan Ke, Jeffrey F. Lukman, and Haryadi S. Gunawi. **Scalability Bugs: When 100-Node Testing is Not Enough**. In *Proceedings of the 16th Workshop on Hot Topics in Operating Systems (**HotOS**), 2017*

Riza O. Suminto, Cesar Stuardo, Alexandra Clark, Huan Ke, Tanakorn Leesatapornwongsa, Bo Fu, Vincentius Martin, Daniar H. Kurniawan, and Haryadi S. Gunawi. **PBSE: A Robust Path-Based Speculative Execution**. In *Proceedings of the 8th ACM Symposium on Cloud Computing (**SoCC**), 2017*

Tanakorn Leesatapornwongsa, Jeffrey F. Lukman, Shan Lu, and Haryadi S. Gunawi. **TaxDC: A Taxonomy of Non-Deterministic Concurrency Bugs in Datacenter Distributed Systems**. In *Proceedings of Architectural Support for Programming Languages and Operating Systems (**ASPLOS**), 2016*

Tanakorn Leesatapornwongsa, and Haryadi S. Gunawi. **SAMC: A Fast Model Checker for Finding Heisenbugs in Distributed Systems**. In *Proceedings of International Symposium on Software Testing and Analysis (**ISSTA**), 2015*

Haryadi S. Gunawi., Thanh Do, Agung Laksono, Mingzhe Hao, Tanakorn Leesatapornwongsa, Jeffrey F. Lukman, and Riza O. Suminto. **What Bugs Live in the Cloud?: A Study of Issues in Scalable Distributed Systems**. In *USENIX ;login: Magazine, Vol. 40, No. 4.*, 2015

Tanakorn Leesatapornwongsa, Mingzhe Hao, Pallavi Joshi, Jeffrey F. Lukman, and Haryadi S. Gunawi. **SAMC: Semantic-Aware Model Checking for Fast Discovery of Deep Bugs in Cloud Systems**. In *Proceedings of the 11th USENIX Symposium on Operating Systems Design and Implementation (**OSDI**), 2014*

Haryadi S. Gunawi, Mingzhe Hao, Tanakorn Leesatapornwongsa, Tiratat Patana-anake, Thanh Do, Jeffry Adityatama, Kurnia J. Eliazar, Agung Laksono, Jeffrey F. Lukman, Vincentius Martin, and Anang D. Satria (Instituitional Order). **What Bugs Live in the Cloud? A Study of 3000+ Issues in Cloud Systems**. In *Proceedings of the 5th ACM Symposium on Cloud Computing (**SoCC**), 2014*

Tanakorn Leesatapornwongsa and Haryadi S. Gunawi. **The Case for Drill-Ready Cloud Computing**. In *Proceedings of the 5th ACM Symposium on Cloud Computing (**SoCC**), 2014*

Thanh Do, Mingzhe Hao, Tanakorn Leesatapornwongsa, Tiratat Patana-anake, and Haryadi S. Gunawi (Student Names are in Alphabetical Order). **Limplock: Understanding the Impact of Limpware on Scale-Out Cloud Systems**. In *Proceedings of the 4th ACM Symposium on Cloud Computing (**SoCC**), 2013*

Invited Talks

May 2017	**Scalability Bugs: When 100-Node Testing is Not Enough**. (***HotOS '17***)[1]
Apr 2017	**Unearthing Concurrency Bugs in Cloud-Scale Distributed Systems**. (*NetApp*)
Apr 2017	**Unearthing Concurrency Bugs in Cloud-Scale Distributed Systems**. (*Microsoft Research*)
Apr 2017	**Unearthing Concurrency Bugs in Cloud-Scale Distributed Systems**. (*Samsung Research America*)
Mar 2017	**Unearthing Concurrency Bugs in Cloud-Scale Distributed Systems**. (*NEC Laboratories America*)
Apr 2016	**TaxDC: A Taxonomy of Non-Deterministic Concurrency Bugs in Datacenter Distributed Systems**. (***ASPLOS '16***)
Aug 2015	**SAMC: Semantic-Aware Model Checking for Fast Discovery of Deep Bugs in Cloud Systems**. (Guest lecturer in *Advanced Operating System course, University of Chicago*)
Jul 2015	**SAMC: A Fast Model Checker for Finding Heisenbugs in Distributed System**. (***ISSTA '15***)
Nov 2014	**The Case for Drill-Ready Cloud Computing**. (***SoCC '14***)
Oct 2014	**SAMC: Semantic-Aware Model Checking for Fast Discovery of Deep Bugs in Cloud Systems**. (***OSDI '14***)

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[1] I was supposed to deliver the talk but I did not get the visa

Posters

Cesar A. Stuardo, Tanakorn Leesatapornwongsa, Riza O. Suminto, Huan Ke, Jeffrey F. Lukman, Wei-Chiu Chuang, Shan Lu, and Haryadi S. Gunawi **ScaleCheck: A Single-Machine Approach for Discovering Scalability Bugs in Large Distributed Systems**. In *Poster Session of the 17th USENIX Conference on File and Storage Technologies (**FAST**)*, 2019

Jeffrey F. Lukman, Huan Ke, Cesar A. Stuardo, Riza O. Suminto, Dikaimin Simon, Daniar H. Kurniawan, Satria Priambada, Chen Tian, Feng Ye, Tanakorn Leesatapornwongsa, Aarti Gupta, Shan Lu, and Haryadi S. Gunawi **FlyMC: Highly Scalable Testing for Complex Interleavings in Cloud Systems** . In *Poster Session of the 14th edition of EuroSys (**EuroSys**)*, 2019

Tanakorn Leesatapornwongsa, Cesar Stuardo, Huan Ke, Jeffrey F. Lukman, Riza O. Suminto, Daniar H. Kurniawan, Haryadi S. Gunawi **SCк: Scale-Checking and Debugging Scalability Bugs on One Machine** . In *Poster Session of the 12th USENIX Symposium on Operating Systems Design and Implementation (**OSDI**)*, 2016

Tanakorn Leesatapornwongsa, Jeffrey F. Lukman, Shan Lu, and Haryadi S. Gunawi. **TaxDC: A Taxonomy of Non-Deterministic Concurrency Bugs in Datacenter Distributed Systems**. In *Poster Session of Architectural Support for Programming Languages and Operating Systems (**ASPLOS**)*, 2016

Haryadi S. Gunawi, Mingzhe Hao, Tanakorn Leesatapornwongsa, Tiratat Patana-anake, Thanh Do, Jeffry Adityatama, Kurnia J. Eliazar, Agung Laksono, Jeffrey F. Lukman, Vincentius Martin, and Anang D. Satria. **What Bugs Live in the Cloud? A Study of 3000+ Issues in Cloud Systems**. In *Poster Session of the 5th ACM Symposium on Cloud Computing (**SoCC**)*, 2014

Tanakorn Leesatapornwongsa, and Haryadi S. Gunawi. **The Case for Drill-Ready Cloud Computing**. In *Poster Session of the 5th ACM Symposium on Cloud Computing (**SoCC**)*, 2014

Tanakorn Leesatapornwongsa, Mingzhe Hao, Pallavi Joshi, Jeffrey F. Lukman, and Haryadi S. Gunawi. **SAMC: Semantic-Aware Model Checking for Fast Discovery of Deep Bugs in Cloud Systems**. In *Poster Session of the 11th USENIX Symposium on Operating Systems Design and Implementation (**OSDI**)*, 2014

Thanh Do, Mingzhe Hao, Tanakorn Leesatapornwongsa, Tiratat Patana-anake, and Haryadi S. Gunawi. **Limplock: Understanding the Impact of Limpware on Scale-Out Cloud Systems**. In *Poster Session of the 4th ACM Symposium on Cloud Computing (**SoCC**)*, 2013

Awards and Honors

2016	**2016 - 2017 Facebook Fellowship Finalist**, Facebook	
2015	**ISSTA '15 Student Financial Support**, US National Science Foundation (NSF)	
2014	**SoCC '14 Student Scholarship**, Association for Computing Machinery (ACM)	
2014	**OSDI '14 Student Grant**, USENIX	
2014	**UU Fellowship**, University of Chicago	
2009	**2nd Class Honor**, Computer Engineering Department, Chulalongkorn University	
2008	**1st Place World RoboCup Championship**, RoboCup Soccer Small Size League	

Professional Service

2019	**Program committee**	ACM Symposium on Cloud Computing (SoCC '19)
2018	**Publicity chair**	ACM Symposium on Cloud Computing (SoCC '18)
2018	**Program committee**	USENIX Annual Technical Conference 2018 (ATC '18)
2018	**Shadow program committee**	The European Conference on Computer Systems 2018 (EuroSys '18)
2016	**External reviewer**	IEEE Transactions on Cloud Computing (TCC)
2015	**External reviewer**	USENIX Conference on File and Storage Technologies 2018 (FAST '15)

Advising

I co-advised the following students along with my advisor. I met with them every week to direct them in research. Some were students in Univeristy at Chicago, and some were remote students in Indonesia.

UChicago PhD	(3 students)	Jeffrey F. Lukman, Huan Ke, and Cesar Studardo
UChicago Masters	(3 students)	Bo Fu, Murphy Zhang, and Yanzhe Wu
Remote Students	(4 students)	Dikaimin Simon (Surya University),
		Danial Heri Kurniawan and Satria Priambada (Bandung Institute of Technology)
		Khoirul Hasin (Sepuluh Nopember Institute of Technology)

Technical Skills

Operating Systems	FreeBSD, Linux
Distributed Systems	Hadoop, ZooKeeper, Cassandra
Cloud Systems	Azure Functions, Azure CosmosDB
File/Storage Systems	ext3, RAID, HDFS, QFS
Programming	Java, Python, Javascript, C/C++, C#