CURRICULUM VITAE

MUOI TRAN (*Vietnamese: Tran Duc Muoi*)

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EDUCATION

2016–2022   Ph.D. in computer science, **National University of Singapore**, Singapore
Advised by Prof. Zhenkai Liang and Prof. Min Suk Kang.
Ph.D. thesis: "Handling network attacks exploiting routing information asymmetries".

2011–2015   B.S. in computer science, **Vietnam National University**, Vietnam
Bachelor's thesis (advised by Prof. Hoang Truong):
"Some improvements for regular expression solving in Z3-Regex".

EXPERIENCE

2022–   Postdoctoral researcher, **ETH Zurich**, Switzerland
I collaborated with Prof. Laurent Vanbever on building more secure networked systems.
My projects included:
- Measuring the Internet's resilience against physical failures.
- Uncovering new DDoS and Internet routing attacks.
- Securing blockchain protocols against network attacks.

2022   Research fellow, **National University of Singapore**, Singapore
I advised graduate students to work on testing blockchain clients via fuzzing.

2018   Intern researcher, **IBM Research**, Singapore
I developed a communication prototype for banks using the HyperLedger framework.

2016   Research assistant, **National University of Singapore**, Singapore
I tested HIPrec, a verification framework reasoning about recursive integer programs.

2015   Intern researcher, **National University of Singapore**, Singapore
I helped to test a few extensions of the Z3 SAT solver.

HONORS AND AWARDS

2022   Dean's Research Excellence Award, **National University of Singapore**, Singapore
Granted to accomplished Ph.D. students who demonstrate sustained research achievements.

2021   Distinguished Shadow Program Committee Reviewer, **IEEE S&P**, USA.
Rewarded to 7/78 reviewers who "did much better than others".

2019–2020	President's Graduate Fellowship, **National University of Singapore**, Singapore.
	Awarded to Ph.D. students with exceptional promise or accomplishment in research.

2019	Microsoft Research Asia Fellowship, **Microsoft**, China.
	Given to 12 outstanding PhD candidates from the Asia-Pacific region.
	Dean's Research Achievement Award, **National University of Singapore**, Singapore.
	Given to Ph.D. students with outstanding research performance in the past year.

2017	I&E Practicum@SoC, **National University of Singapore**, Singapore.
	A 10,000 SGD award for students with outstanding innovations.

2016–2019	Research Scholarship, **National University of Singapore**, Singapore.
	Default Ph.D. scholarship, upgraded into President's Graduate Fellowship.

2015	Y-E-S (Young Engineer and Scientist's) Award, **Honda Foundation**, Vietnam.
	Awarded to 10 Vietnamese undergraduate students in engineering or science.
	Best undergraduate thesis defense, **Vietnam National University**, Vietnam.
	Awarded to undergraduate students with excellent thesis defenses.
	1st, Student Scientific Research contest, **Vietnam National University**, Vietnam.
	Awarded to selected scientific research projects.

2012	GE Foundation Scholar-Leaders, **GE Foundation**, Vietnam.
	Awarded to 10 first-year students in Vietnam.

PUBLICATIONS

2024	**Muoi Tran**, Theo von Arx, Laurent Vanbever.
	"Routing Attacks on Cryptocurrency Mining Pools".
	45th IEEE Symposium on Security and Privacy (IEEE S&P '24).

2023	Theo von Arx, **Muoi Tran**, Laurent Vanbever.
	"Revelio: A Network-Level Privacy Attack in the Lightning Network".
	8th IEEE European Symposium on Security and Privacy (IEEE EuroS&P '23).
	Jaehyun Ha, Seungjin Baek, **Muoi Tran**, Min Suk Kang.
	"On the Sustainability of Bitcoin Partitioning Attacks".
	27th International Conference on Financial Cryptography and Data Security (FC '23).

2022	Seungjin Baek, Hocheol Nam, Yongwoo Oh, **Muoi Tran**, Min Suk Kang.
	"Short paper: On the Claims of Weak Block Synchronization in Bitcoin".
	26th International Conference on Financial Cryptography and Data Security (FC '22).

2021	**Muoi Tran**, Akshaye Shenoi, Min Suk Kang.
	"On the Routing-Aware Peering against Network-Eclipse Attacks in Bitcoin".
	30th USENIX Security Symposium (USENIX Security '21).

2020	**Muoi Tran**, Inho Choi, Gi Jun Moon, Anh V. Vu, Min Suk Kang.
	"A Stealthier Partitioning Attack against Bitcoin Peer-to-Peer Network".
	41st IEEE Symposium on Security and Privacy (IEEE S&P '20).

2019	Deli Gong, **Muoi Tran**, Shweta Shinde, Hao Jin, Vyas Sekar, Prateek Saxena, Min Suk Kang.
	"Practical Verifiable In-network Filtering for DDoS defense".
	39th IEEE International Conference on Distributed Computing Systems (ICDCS '19).
	Muoi Tran, Min Suk Kang, Hsu-Chun Hsiao, Wei-Hsuan Chiang, Shu-Po Tung, Yu-Su Wang.
	"On the Feasibility of Rerouting-based DDoS Defenses".
	40th IEEE Symposium on Security and Privacy (IEEE S&P '19).

2018	**Muoi Tran**, Loi Luu, Min Suk Kang, Iddo Bentov, Prateek Saxena.
	"Obscuro: A Bitcoin Mixer using Trusted Execution Environments".
	34th Annual Computer Security Applications Conference (ACSAC '18).

UNDER REVIEW

Wen-yi Chu, Cheng-Kang Chen, **Muoi Tran**, Hsun Lee, Laurent Vanbever, Hsu-Chun Hsiao.
"█████████████████████████████".

Georgia Fragkouli, Pavlos Nikolopoulos, **Muoi Tran**, Laurent Vanbever, Katerina Argyraki.
"██".

Wonhoi Kim, Hochoel Nam, **Muoi Tran**, Amin Jalilov, Zhenkai Liang, Sang Kil Cha, Min Suk Kang.
"██████████████████████████████████████".

TEACHING

Assistant teach	"Advanced Topics in Communication Networks"
	ETH Zurich, Switzerland (2023)
	"Network Security"
	National University of Singapore, Singapore (2017, 2020)
	"System Security"
	National University of Singapore, Singapore (2017)
	"Introduction to Operating Systems"
	National University of Singapore, Singapore (2017)
	"Programming language concepts"
	National University of Singapore, Singapore (2016)

Guest teach	"Network Security"
	• ETH Zurich, Switzerland (2023)
	• National University of Singapore, Singapore (2020, 2021)
	• Korea Advanced Institute of Science and Technology, Online (2020)

SUPERVISION

2024   Alessandro Giaconia (jointly supervised with Prof. Stefano Vissicchio).
"Manipulating BGP monitors".
Semester project, ETH Zurich, Switzerland.

Nikodem Kernbach (jointly supervised with Theo von Arx).
"Exploring Morphing DDoS Attacks".
Master's thesis, ETH Zurich, Switzerland.

Dominique Portenier (jointly supervised with Theo von Arx and Prof. Stefano Vissicchio).
"Stealthier BGP Hijacking Attacks".
Semester project, ETH Zurich, Switzerland.

2023   Kai De Windt (jointly supervised with Lioba Heimbach).
"Network-level Attacks Against Ethereum PoS".
Semester project, ETH Zurich, Switzerland.

Kilian Dasen (jointly supervised with Ege C. Kirci).
"The Ramifications of Physical Failures on the Logical Internet".
Semester project, ETH Zurich, Switzerland.

Nguyet-Anh Duong (jointly supervised with Prof. Hoang Truong).
Securing Relayers in Cross-chain Bridges with Network-based Obfuscation.
Bachelor's thesis, Vietnam National University, Vietnam.

2022   Theo von Arx (jointly supervised with Prof. Laurent Vanbever).
Generalizing Passive Routing Attacks Against Overlay Networks.
Master's thesis, ETH Zurich, Switzerland.

Jonas Konrath (jointly supervised with Prof. Laurent Vanbever).
Detection of Large-scale Synchronized BGP Hijacking Attacks.
Bachelor's thesis, ETH Zurich, Switzerland.

INVITED TALKS

2022   "Attacking and Fixing the Bitcoin Network"
- Syracuse University (Online)
- Vietnam National University, Hanoi, Vietnam
- University of Cambridge (Online)

2021   "Handling Network Attacks Exploiting Routing Information Asymmetries"
- CISPA Helmholtz Center for Information Security (Online)

"On the Routing-Aware Peering against Network-Eclipse Attacks in Bitcoin"
- Theory and Practice of Blockchains (Online)

2019   "Recent Bitcoin Partitioning Attacks"
- Microsoft Research Asia, Beijing, China

PROFESSIONAL SERVICES

2024   31th ACM Conference on Computer and Communications Security (CCS)
            Technical PC member

            9th IEEE European Symposium on Security and Privacy (EuroS&P)
            Technical PC member

2023   44th IEEE Symposium on Security and Privacy (S&P)
            Poster PC member

2022   43rd IEEE Symposium on Security and Privacy (S&P)
            Poster PC member

2021   9th International Workshop on Security in Blockchain and Cloud Computing (SBC)
            Technical PC member

            The Network and Distributed System Security Symposium (NDSS) 2021
            External reviewer

            Admissions to the Master's program at NUS
            Reviewer

            The Web Conference (WWW) 2021
            External reviewer

2020   42nd IEEE Symposium on Security and Privacy (S&P)
            Poster and Shadow PC member

            27th ACM Conference on Computer and Communications Security (CCS)
            External reviewer

            15th ACM Asia Conference on Computer and Communications Security (AsiaCCS)
            External reviewer

            24th International Conference on Financial Cryptography and Data Security (FC)
            External reviewer

2019   Computer Science Research Week at the National University of Singapore
            Organizer

2017   18th World Conference on Information Security Applications (WISA)
            External reviewer

            International Conference on Verification, Model Checking, and Abstract Interpretation (VMCAI)
            External reviewer

2016   2016 ACM SIGPLAN International Conference on Object-Oriented Programming,
            Systems, Languages, and Applications (OOPSLA)
            External reviewer

REFERENCES

Prof. Laurent Vanbever
ETH Zurich
lvanbever@ethz.ch

Prof. Zhenkai Liang
National University of Singapore
liangzk@comp.nus.edu.sg

Prof. Min Suk Kang
Korea Advanced Institute of Science and Technology
minsukk@kaist.ac.kr