

Taejoong (Tijay) Chung

Assistant Professor (tijay@vt.edu, <https://taejoong.github.io>)

Education

- 09/2009–02/2015 **Ph.D.**, Computer Science and Engineering, Seoul National University, Seoul, Korea.
 - Supervisors: Prof. Yanghee Choi and Prof. Ted “Taekyoung” Kwon
- 03/2005–09/2009 **B.S.**, Computer Science and Engineering, POSTECH (Pohang University of Science and Technology), Pohang, Korea.

Professional Experiences

- 08/2020–present **Assistant Professor**, Department of Computer Science, Virginia Tech, Blacksburg, VA, United States.
- 02/2023–present **Adjunct Professor**, Department of Computer Science, POSTECH, Pohang, South Korea.
- 08/2018–07/2020 **Assistant Professor**, Department of Computer Science, Rochester Institute of Technology (RIT), Rochester, NY, United States.
- 09/2015–08/2018 **Postdoctoral Researcher**, Northeastern University, Boston, MA, United States.

Honors and Awards

- 2022 Best Paper Honorable Mention Award, ACM CCS'22
- 2022 Mutually Agreed Norms for Routing Security (MANRS) Research Fellow
- 2019 Distinguished Paper Award, ACM IMC'19
- 2019 Applied Networking Research Prize (ANRP), IETF'105
- 2017 Distinguished Paper Award, USENIX Security'17
- 2015 Microsoft Azure Research “Award Program: Microsoft Azure for Research Supports \$20,000”

Grants

- 2022 Towards a complete view of Route Origin Validation in RPKI
 - Comcast Innovation Fund, 06/2022 – 05/2023, Primary Investigator, \$75,000
- 2021 Enhancing the Privacy and Reliability of Massive-scale Bluetooth Low Energy Contact Tracing
 - Commonwealth Cyber Initiative, 06/2021 – 05/2022. Co-Primary Investigator, joint with Daphne Yao (VT), Carol Fung (VCU) \$100,000 (VT), \$150,000 (total)
- 2019 CNS Core: Large: Collaborative Research: Towards an Evolvable Public Key Infrastructure
 - National Science Foundation. CNS-1901090, 06/2019 – 05/2022. Primary Investigator, joint with Dave Levin (UMD), Bruce M. Maggs (Duke University), Alan Mislove (NEU), Christo Wilson (NEU), Bryan Parno (CMU). \$300,000 (RIT), \$2,000,000 (total)
- 2019 CRII: SaTC: Measuring and Improving the Management of Resource Public Key Infrastructure (RPKI)

- National Science Foundation. CNS-1850465, 10/2019 – 09/2021. Primary Investigator. \$166,561
- 2015 Personal Recommendation System and Privacy Protection through Big Data Analysis on Online Social Networks
 - National Research Foundation of Korea (NRF). NRF-2016018668, 03/2015 – 02/2016. Primary Investigator. ₩50,000,000 (≈ \$44,000)

Refereed Conference Publications

- PAM'23 **Exploring the Evolution of the TLS Certificate Ecosystem**
Syed Muhammad Farhan and [T. Chung](#)
Virtual, March 2023
- PAM'23 **Measuring TTL Violation of DNS Resolvers in the Wild**
Protick Bhowmick, Mohammad Ishtiaq Ashiq Khan, Casey Deccio, and [T. Chung](#)
Virtual, March 2023
- IMC'22 **A Comparative Analysis of Certificate Pinning in Android & iOS**
Amogh Pradeep, Muhammad Talha Paracha, Protick Bhowmick, Ali Davanian, Abbas Razaghpahan, [T. Chung](#), Martina Lindorfer, Narseo Vallina-Rodriguez, Dave Levin, and David Choffnes
IMC, Nice, France, October 2022
- CCS'22 **Hammurabi: A Framework for Pluggable, Logic-based X.509 Certificate Validation Policies**
James Larisch, Waqar Aqeel, Christo Wilson, Alan Mislove, [T. Chung](#), Dave Levin, Bryan Parno, and Bruce Maggs
CCS, Los Angeles, CA, USA, Nov 2022
- USENIX Security'22 **Under the hood of DANE mismanagement in SMTP**
H. Lee, I. Ashiq, M. Muller R. van Rijswijk-Deij, T. Kwon, [T. Chung](#)
USENIX Security, Boston, United States, August 2022
- SIGCOMM'21 **IP Unbound: Robust, Responsive CDN-scale service without CDN-Scale Addresses**
M. Fayed, V. Giotsas, L. Bauer, S. Kerola, M. Majkowski, P. Odintsov, J. Sitnicki, [T. Chung](#), D. Levin, A. Mislove, N. Sullivan, and C. Wood
SIGCOMM, Virtual Conference, Aug. 2021
- PAM'21 **Measurement and Analysis of Automated Certificate Reissuance**
O. Omolola, R. Roberts, I. Ashiq, [T. Chung](#), D. Levin, and A. Mislove
PAM, Virtual Conference, Mar. 2021
- IMC'20 **The Reality of Algorithm Agility: Studying the DNSSEC Algorithm Life-Cycle**
M. Mueller, W. Toorop, [T. Chung](#), J. Janssen, and R. van Rijswijk-Deij
IMC, Pittsburgh, United States, Oct. 2020
- FCS'20 **Assertion-Carrying Certificates**
W. Aqeel, Z. Hanif, J. Larisch, O. Omolola, [T. Chung](#), D. Levin, B. Maggs, A. Mislove, B. Parno, and C. Wilson
the Workshop on Foundations of Computer Security, Boston, United States, June 2020
- USENIX Security'20 **A Longitudinal and Comprehensive Study of the DANE Ecosystem in Email**
H. Lee, A. Gireesh, R. van Rijswijk-Deij, T. Kwon, [T. Chung](#)
USENIX Security, Boston, United States, August 2020
- CCS'19 **You Are Who You Appear to Be: A Longitudinal Study of Domain Impersonation in TLS Certificates**
R. Roberts, Y. Goldschlag, R. Walter, [T. Chung](#), A. Mislove, D. Levin
CCS, London, United Kingdom, Nov. 2019

- IMC'19 **RPKI is Coming of Age: A Longitudinal Study of RPKI Deployment and Invalid Route Origins**
T. Chung, E. Aben, T. Bruijnzeels, B. Chandrasekaran, D. Choffnes, D. Levin, B. M. Maggs, A. Mislove, R. van Rijswijk-Deij, J. P. Rula, and N. Sullivan
IMC, Amsterdam, The Netherlands, Oct. 2019
- IMC'19 **Roll, Roll, Roll your Root: A Comprehensive Analysis of the First Ever DNSSEC Root KSK Rollover**
M. Müller, M. Thomas, D. Wessels, W. Hardaker, T. Chung, W. Toorop, and R. van Rijswijk-Deij
IMC, Amsterdam, The Netherlands, Oct. 2019
- NDSS'19 **maTLS: How to Make TLS middlebox-aware?**
H. Lee, Z. Smith, J. Lim, G. Choi, S. Chun, T. Chung, and T. Kwon
NDSS, San Diego, USA, Feb. 2019
- IMC'18 **Is the Web Ready for OCSP Must Staple?**
T. Chung, J. Lok, B. Chandrasekaran, D. Choffnes, D. Levin, B. M. Maggs, A. Mislove, J. Rula, N. Sullivan, and C. Wilson
IMC, Boston, USA, Nov. 2018
- CSCW'18 **Privacy Leakage in Event-based Social Networks: A Meetup Case Study**
T. Chung, J. Han, D. Choi, T. Kwon, J. Rha, and H. Kim
CSCW, Jersey City, USA, Nov. 2018
- IMC'17 **Understanding the Role of Registrars in DNSSEC Deployment**
T. Chung, R. van Rijswijk-Deij, D. Choffnes, A. Mislove, C. Wilson, D. Levin, and B. M. Maggs
IMC, London, UK, Nov. 2017
- USENIX Security'17 **A Longitudinal, End-to-End View of the DNSSEC Ecosystem**
T. Chung, R. van Rijswijk-Deij, B. Chandrasekaran, D. Choffnes, D. Levin, B. M. Maggs, A. Mislove, and C. Wilson
USENIX Security, Vancouver, Canada, Aug. 2017
- IMC'16 **Measuring and Applying Invalid SSL Certificates: The Silent Majority**
T. Chung, Y. Liu, D. Choffnes, D. Levin, B. M. Maggs, A. Mislove, and C. Wilson
IMC, Santa Monica, CA, USA, Nov. 2016
- IMC'16 **Tunneling for Transparency: A Large-Scale Analysis of End-to-End Violations in the Internet**
T. Chung, D. Choffnes, and A. Mislove
IMC, Santa Monica, CA, USA, Nov. 2016
- CCS'16 **Measurement and Analysis of Private Key Sharing in the HTTPS Ecosystem**
F. Cangialosi, T. Chung, D. Choffnes, D. Levin, B. M. Maggs, A. Mislove, and C. Wilson
CCS, Vienna, Austria, Oct. 2016
- COSN'15 **Characterizing Conversation Patterns in Reddit: From the Perspectives of Content Properties and User Participation Behaviors**
D. Choi, J. Han, T. Chung, Y. Ahn, B. Chun, and T. Kwon
COSN, Stanford, CA, USA, Nov. 2015
- COSN'15 **Sharing Topics in Pinterest: Understanding Content Creation and Diffusion Behaviors**
J. Han, D. Choi, A. Choi, T. Chung, T. Kwon, J. Rha, and C. Chuah
COSN, Stanford, CA, USA, Nov. 2015
- ANCS'14 **CoRC: Coordinated Routing and Caching for Named Data Networking**
H. Choi, J. Yoo, T. Chung, N. Choi, T. Kwon, and Y. Choi
ANCS, Marina del Rey, CA, USA, Oct. 2014
- WWW'14 **Unveiling Group Characteristics in Online Social Games: A Socio-Economic Analysis**
T. Chung, J. Han, D. Choi, T. Kwon, H. K. Kim and Y. Choi
WWW, Seoul, Korea, Apr. 2014

- IFIP Networking'13 **Spatial and Temporal Locality of Content in BitTorrent: A Measurement Study**
T. Chung, J. Han, H. Lee, J. Kangasharju, T. Kwon, and Y. Choi
IFIP Networking, Brooklyn, NY, USA, May 2013
- SIGMETRICS'12 **Bundling Practice in Bittorrent: What, How, and Why**
J. Han, S. Kim, T. Chung, T. Kwon, H. Kim, and Y. Choi
SIGMETRICS, London, UK, Jun. 2012
- IFIP Networking'12 **Content Publishing and Downloading Practice in BitTorrent**
S. Kim, J. Han, T. Chung, T. Kwon, H. Kim, and Y. Choi
IFIP Networking, Prague, Czech, May 2012
- GLOBECOM'12 **Bandwidth Allocation for BitTorrent under Multi-Torrent Environments**
J. Choi, J. Han, T. Chung, E. Cho, T. Kwon, and Y. Choi
GLOBECOM, Houston, Texas, United States, Dec. 2011

Journal Publications

Privacy Guarantees of BLE Contact Tracing: A Case Study on COVIDWISE.

Salman Ahmed, Ya Xiao, T. Chung, Carol Fung, Moti Yung, and Danfeng (Daphne) Yao.
IEEE Computer Society, 2021

Rolling with Confidence: Managing the Complexity of DNSSEC Operations

Moritz Muller, T. Chung, Alan Mislove, and Roland van Rijswijk-Deij
IEEE Transactions on Network and Service Management (IEEE TNSM), 2019

Predicting Content Consumption from Content-to-Content Relationships

Jinyoung Han, Daejin Choi, T. Chung, Chen-Nee Chuah, Hyun-chul Kim, and Ted "Taekyoung" Kwon

Elsevier Journal of Network and Computer Applications (JNCA), Vol. 132, pp. 1, April 2019

A First Look at Certification Authority Authorization (CAA)

Quirin Scheitle, T. Chung, Jens Hiller, Oliver Gasser, Johannes Naab, Roland van Rijswijk-Deij, Oliver Hohlfeld, Ralph Holz, Dave Choffnes, Alan Mislove, and Georg Carle

ACM SIGCOMM Computer Communications Review (CCR), Vol. 48, pp. 2, Apr. 2018

An End-to-End View of DNSSEC Ecosystem Management

T. Chung, R. van Rijswijk-Deij, B. Chandrasekaran, D. Choffnes, D. Levin, B. M. Maggs, A. Mislove, and C. Wilson

USENIX Magazine ;login:, Vol. 42, No. 4, Dec. 2017

A Target-centric Surveillance System based on Localization and Social Networking

J. Han, N. Choi, T. Chung, T. Kwon, and Y. Choi

Multimedia Tools and Applications (MTAP), Vol. 73, Issue 1, pp. 241-265, Nov. 2014

Strategic Bundling for Content Availability and Fast Distribution in BitTorrent

J. Han, T. Chung, S. Kim, H. Kim, J. Kangasharju, T. Kwon, and Y. Choi

Computer Communication (COMCOM), Vol. 43, pp. 64-73, May 2014

Bundling Practice in Bittorrent: What, How, and Why

J. Han, S. Kim, T. Chung, T. Kwon, H. Kim, and Y. Choi

ACM SIGMETRICS Performance Evaluation Review, Vol. 40, No. 1, pp. 77-88, Jun. 2012.

How Prevalent is Content Bundling in BitTorrent?

J. Han, T. Chung, S. Kim, T. Kwon, H. Kim, and Y. Choi

ACM SIGMETRICS Performance Evaluation Review, Vol. 39, No. 1, pp. 319-320, Jun. 2011.

Posters

- IMC'19 **Tracking Registrar Support for DNSSEC: It's Slowly Getting Better**
Spencer Roth, R. van Rijswijk-Deij, and **T. Chung**
IMC, Amsterdam, The Netherlands, USA, Aug. 2017
- SIGCOMM'17 **The Root Canary: Monitoring and Measuring the DNSSEC Root Key Rollover**
R. van Rijswijk-Deij, **T. Chung**, D. Choffnes, A. Mislove, and W. Toorop
SIGCOMM, Los Angeles, CA, USA, Aug. 2017
- ACNS'14 **Toward Terabyte-scale Caching with SSD in a Named Data Networking Router**
W. So, **T. Chung**, H. Yuan, D. Oran, and M. Stapp
ANCS, Marina del Rey, CA, USA, Oct. 2014
- PAM'13 **Spatial and Temporal Locality of Swarm Dynamics in BitTorrent**
T. Chung, J. Han, H. Lee, J. Kangasharju, T. Kwon, and Y. Choi
PAM, Hong Kong, March. 2013.

Non-Refereed Conference Publications

- TPRC'17 **Investigating End-To-End Integrity Violations in Internet Traffic**
A. Mislove, D. Choffnes, and **T. Chung**
TPRC, Arlington, VA, USA, Sept. 2017

Fellowships

- 2012–2016 **Samsung Ph.D. Industrial Scholarship.**
- 2010–2012 **Hyundai (Hajung) Scholarship.**
- Summer 2007 **POSTECH Student Exchange Program to UCLA.**
- 2005–2008 **National Science & Technology Scholarship, KOSAF(Korea Student Aid Foundation).**

Service

Award Committee Member.

- '23 IETF/IRTF Applied Networking Research Prize (ANRP)
- '22 IETF/IRTF Applied Networking Research Prize (ANRP)
- '21 IETF/IRTF Applied Networking Research Prize (ANRP)
- '21 ACM Student Research Competition (SRS) for SIGCOMM poster and demo session

General Chair.

- '22 The ACM/IRTF Applied Networking Research Workshop (ANRW)

Steering Committee Member.

- '23 The ACM/IRTF Applied Networking Research Workshop (ANRW)

Program Committee Member.

- '23 IEEE SecWeb
- '23 IEEE MetaCom Workshop
- '23 The Passive and Active Measurement (PAM)
- '23 ACM Conference on SIGMETRICS/Performance
- '23 IEEE Symposium on Security and Privacy (Oakland)
- '22 ACM Conference on emerging Networking EXperiments and Technologies (CoNEXT)

- '22 ACM Internet Measurement Conference (IMC)
- '22 IEEE International Conference on Network Protocols (ICNP)
- '22 The Passive and Active Measurement (PAM)
- '22 ACM Conference on SIGMETRICS/Performance
- '21 ACM Conference on Computer and Communications Security (CCS) – External reviewer
- '21 The ACM/IRTF Applied Networking Research Workshop (ANRW)
- '21 ACM Internet Measurement Conference (IMC)
- '21 IEEE International Conference on Network Protocols (ICNP)
- '21 The Passive and Active Measurement (PAM)
- '20 The ACM/IRTF Applied Networking Research Workshop (ANRW)
- '20 The Network Traffic Measurement and Analysis Conference (TMA)
- '20 The Passive and Active Measurement (PAM)
- '19 ACM Internet Measurement Conference (IMC)
- '19 International Conference on Social Informatics (SocInfo)
- '19 The Passive and Active Measurement (PAM)
- '19 International AAAI Conference on Web and Social Media (ICWSM)
- '18 International AAAI Conference on Web and Social Media (ICWSM)
- '17 International AAAI Conference on Web and Social Media (ICWSM)
- '17 IEEE International Conference on Ubiquitous Computing and Communications (IUCC)
- '14 Poster Selection Committee of ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS)

Shadow Program Committee Member.

- '18 ACM Internet Measurement Conference (IMC)
- '17 ACM Internet Measurement Conference (IMC)

Artifact Evaluation Member.

- '20 International Conference on emerging Networking EXperiments and Technologies (CoNEXT)

Web Chair.

- '22 ACM SIGCOMM
- '21 ACM SIGCOMM
- '21 ACM Internet Measurement Conference (PAM)
- '19 ACM Internet Measurement Conference (IMC)

Travel Grant Chair.

- '22 ACM Internet Measurement Conference (IMC)

Registration Chair.

- '18 ACM Internet Measurement Conference (IMC)

Journal Reviewer.

- '22 IEEE Transactions on Dependable and Secure Computing
- '21 Elsevier Computers & Security
- '21 IEEE/ACM Transactions on Networking

- '20 ACM Computer Communication Review
- '19 IEEE Transactions on Dependable and Secure Computing
- '19 IEEE/ACM Transactions on Networking
- '19 ACM Transactions on Privacy and Security
- '19 ACM Computer Communication Review
- '16 ACM Computer Communication Review
- Proposal Reviewer.**
- '21 The Commonwealth Cyber Initiative (CCI): NextG
- Internal and Other Service.**
- '22 VT Hacks IX Judge
- '21 Career Panel: BranchOut, A Youth Community Outreach Program for Local High School Students
- '21 VT Hacks IX Judge

Talks

- 03/14/2022 MANRS Community Workshop
- 11/30/2021 DNS OARC 36
- 12/09/2019 Workshop on Internet Economics: Knowledge of Internet Structure: Measurement, Epistemology, and Technology (WIE-KISMET) at CAIDA
- 10/23/2019 ACM Internet Measurement Conference (IMC)
- 10/04/2019 RIT Industrial Advisory Board (IAB) Meeting
- 08/08/2019 Office of Naval Research (ONR)
- 07/23/2019 Internet Engineering Task Force (IETF) 105
- 01/07/2019 Korea Advanced Institute of Science and Technology (KAIST)
- 12/27/2018 Sungkyunkwan University (SKKU)
- 11/16/2018 GCCIS PhD Colloquium Series at Rochester Institute of Technology (RIT)
- 11/05/2018 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)
- 11/01/2018 ACM Internet Measurement Conference (IMC)
- 09/14/2018 Great Lakes Security Day (GLSD)
- 06/29/2018 Sonos at Boston
- 05/30/2018 Graduate School of Information Security at Korea University
- 03/21/2018 Department of Computer Science and Engineering at Washington University in St. Louis (WUSTL)
- 02/28/2018 Department of Computer Science at Rochester Institute of Technology (RIT)
- 11/02/2017 ACM Internet Measurement Conference (IMC)
- 09/29/2017 New England Security Day (NESD)
- 09/08/2017 Research Conference on Communications, Information and Internet Policy (TPRC)
- 08/18/2017 USENIX Security
- 11/16/2016 ACM Internet Measurement Conference (IMC)
- 11/15/2016 ACM Internet Measurement Conference (IMC)

10/07/2016 New England Networking and Systems Day (NENS)
12/29/2014 Korea Advanced Institute of Science and Technology (KAIST)
04/10/2014 World Wide Web Conference (WWW)
05/22/2013 IFIP Networking
12/07/2011 IEEE GLOBECOM

References

Alan Mislove (amislove@ccs.neu.edu)

Associate Professor of Computer Science, Northeastern University, USA

David Choffnes (choffnes@ccs.neu.edu)

Associate Professor of Computer Science, Northeastern University, USA

Bruce M. Maggs (bmm@cs.cmu.edu)

Professor of Computer Science, Duke University and Vice President of Research, Akamai Technologies, USA

Christo Wilson (c.wilson@ccs.neu.edu)

Associate Professor of Computer Science, Northeastern University, USA

Dave Levin (dml@cs.umd.edu)

Assistant Professor of Computer Science, University of Maryland, USA

Ted “Taekyoung” Kwon (tkkwon@snu.ac.kr)

Professor, School of Computer Science & Engineering, Seoul National University, South Korea