

# Taejoong (Tijay) Chung

Assistant Professor ([tjc@cs.rit.edu](mailto:tjc@cs.rit.edu), <https://taejoong.github.io>)

## Education

- 09/2009–02/2015 **Ph.D.**, Computer Science and Engineering, Seoul National University, Seoul, Korea.
- Thesis: “*Analytic Approach of Understanding Crowd Phenomena on the Internet: Case Studies of MMORPG and BitTorrent*”
  - 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

- 08/2018–present **Assistant Professor**, B. Thomas Golisano College of Computing and Information Sciences, Rochester Institute of Technology (RIT), Rochester, NY, United States.
- 09/2015–08/2018 **Postdoctoral Researcher**, Northeastern University, Boston, MA, United States.
- 03/2015–02/2016 **Postdoctoral Researcher**, Seoul National University, Seoul, Korea.
- 06/2013–03/2014 **Research Intern**, Cisco Systems, Cambridge, MA, United States.
- 08/2011–02/2015 **Research Assistant**, Seoul National University, Seoul, Korea.

## Honors and Awards

- 2019 Applied Networking Research Prize at IETF’105
- 2017 Distinguished Paper Award, USENIX Security’17
- 2015 Microsoft Azure Research “Award Program: Microsoft Azure for Research Supports \$20,000”
- 2010 Best Paper Award, Korea Information and Communication Society (KICS)
- 2010 Best Paper Award, IEEE Communication Society Seoul Chapter

## Grants

- 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)

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## Publications Summary

Security **4 papers in top-tier security conferences**  
USENIX Security, ACM CCS, and ISOC NDSS

Network/Metric **8 papers in top-tier networking/web conferences**  
ACM IMC, ACM SIGMETRICS, and ISOC WWW

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## Refereed Conference Publications

- CCS'19 **You Are Who You Appear to Be: A Longitudinal Study of Domain Impersonation in TLS Certificates**  
Richard Roberts, Yaelle Goldschlag, Rachel Walter, [T. Chung](#), Alan Mislove, Dave 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](#), Emile Aben, Tim Bruijnzeels, Balakrishnan Chandrasekaran, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, Roland van Rijswijk-Deij, John P. Rula, and Nick Sullivan  
IMC, Amsterdam, Netherlands, Oct. 2019
- IMC'19 **Roll, Roll, Roll your Root: A Comprehensive Analysis of the First Ever DNSSEC Root KSK Rollover**  
Moritz Müller, Matthew Thomas, Duane Wessels, Wes Hardaker, [T. Chung](#), Willem Toorop, and Roland van Rijswijk-Deij  
IMC, Amsterdam, Netherlands, Oct. 2019
- NDSS'19 **maTLS: How to Make TLS middlebox-aware?**  
Hyunwoo Lee, Zachary Smith, Junghwan Lim, Gyeongjae Choi, Selin Chun, [T. Chung](#), and Ted "Taekyoung" Kwon  
NDSS, San Diego, USA, Feb. 2019
- IMC'18 **Is the Web Ready for OCSP Must Staple?**  
[T. Chung](#), Jay Lok, Balakrishnan Chandrasekaran, David Choffnes, Dave Levin, Bruce M. Maggs, Alan Mislove, John Rula, Nick Sullivan, and Christo 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

### 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.

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## Posters

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.

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## 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

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## 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).**

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## Service

### **Program Committee Member.**

'20 Program Committee of The Passive and Active Measurement (PAM)

'19 Program Committee of Internet Measurement Conference (IMC)

'19 Program Committee of International Conference on Social Informatics (SocInfo)

'19 Program Committee of The Passive and Active Measurement (PAM)

'19 Program Committee of International AAAI Conference on Web and Social Media (ICWSM)

'18 Program Committee of International AAAI Conference on Web and Social Media (ICWSM)

'17 Program Committee of International AAAI Conference on Web and Social Media (ICWSM)

'17 Program Committee of 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)

**Web Chair.**

'19 ACM Internet Measurement Conference (IMC)

**Registration Chair.**

'18 ACM Internet Measurement Conference (IMC)

**Reviewer.**

'19 IEEE Transactions on Dependable and Secure Computing

'19 SIGCOMM Computer Communication Review

'19 IEEE/ACM Transactions on Networking

'19 ACM Transactions on Privacy and Security

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## Talks

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

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## References

**Alan Mislove (amislove@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

**Dave Levin (dml@cs.umd.edu)**

Assistant Professor of Computer Science, University of Maryland, USA

**David Choffnes (choffnes@ccs.neu.edu)**

Assistant Professor of Computer Science, Northeastern University, USA

**Dave Oran (daveoran@orandom.net)**

Former fellow at Cisco Systems, USA

**Ted "Taekyoung" Kwon (tkkwon@snu.ac.kr)**

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