

Hyounghshick Kim

CONTACT INFORMATION	Department of Software College of Software Sungkyunkwan University, Suwon, Korea	office: +82 31 299 4324 mobile: +82 10 5557 3081 e-mail: hyoung@skku.edu
RESEARCH INTERESTS	Usable security, user authentication, software security and social network analysis	
EDUCATION	Ph.D Computer Laboratory, University of Cambridge, UK, 2008–2011 <ul style="list-style-type: none">• Supervisor: Prof. Ross Anderson• Thesis: Complex network analysis for secure and robust communications (Examiners – Prof. Jon Crowcroft and Prof. Alessandro Acquisti) M.S. Division of Computer Science, KAIST, Korea, 1999–2001 <ul style="list-style-type: none">• Supervisor: Prof. Kyung-Yong Chwa• Thesis: A Distributed Algorithm for Maintaining a Minimum Spanning Tree in Dynamic Network B.S. Department of Information Engineering, Sungkyunkwan University, Korea, 1995–1999 <ul style="list-style-type: none">• Supervisor: Prof. Youngik Eom• Thesis: Distributed Mutual Exclusion Algorithm for Maintaining Tree-Height Balance in Mobile Computing Environments	
PROFESSIONAL EXPERIENCE	Sungkyunkwan University , Suwon, Korea <i>Associate Professor</i> – Security Engineering Laboratory 2013–present <ul style="list-style-type: none">• Is researching security engineering. University of British Columbia , Vancouver, BC, Canada <i>Postdoctoral Fellow</i> – Laboratory for Education and Research in Secure Systems Engineering 2012 <ul style="list-style-type: none">• Researched human authentication and information diffusion in online social networks. Samsung Electronics , Digital Media R&D Center, Suwon, Korea <i>Senior Engineer</i> – Core S/W Component Laboratory 2008 <ul style="list-style-type: none">• Designed and developed DRM applications for home networks. Samsung Electronics , Software Laboratories, Seoul/Suwon, Korea <i>Engineer/Senior Engineer</i> – Home Software Platform Team 2004–2007 <ul style="list-style-type: none">• Designed and developed DRM interoperability solutions (DLNA and Coral).	
TEACHING	Lecturer , Sungkyunwan University: Network Project (2019) Lecturer , Sungkyunwan University: Computer Security (2017) Lecturer , Sungkyunwan University: Special Topics in Computer Science (2017–2018) Lecturer , Sungkyunwan University: Security Engineering (2013–2019) Lecturer , Sungkyunwan University: Basic Programming Languages (2015–2016) Lecturer , Yonsei University: Database Security (2015–2017) Lecturer , Sungkyunwan University: Data Structures (2014–2018) Lecturer , Sungkyunwan University: Introduction to Information and Communication Engineering (2013) Lecturer , Sungkyunwan University: Engineering Computer Programming (2013–2014) Organizer , Sungkyunwan University: Freshmen Seminar (2013) Guest Lecturer , University of British Columbia: Computer Security (2012) Teaching Assistant , University of Cambridge: Part II Projects (2010–2011), Computer Security (2009–2010), Algorithm (2010), Bioinformatics (2009) and Database (2009); KAIST: Problem Solving (2002), Algorithm (2000–2002), Graph Theory (2001) and Data Structures (1999)	

ACADEMIC
SERVICES
(SELECTED)

Consultant

Technical Consultant at LG Electronics	2018–present
Privacy Policy Consultant at Kakao	2018–present
Technical Consultant at Financial Security Institute	2018–2019
Technical Consultant at Samsung Electronics	2013–2018

Program Committee Member

Australasian Conference on Information Security and Privacy	2019
ACM Asia Conference on Computer & Communications Security	2018
International Conference on Advanced and Trusted Computing	2016–2018
ACM/SIGAPP Symposium on Applied Computing	2016–2018
International Conference on Ubiquitous Information Management and Communication	2016–2019
International Workshop on Cyber Crime	2016
Workshop on Security in Software Defined Networks & Network Function Virtualization	2016
International Symposium on Foundations and Practices of Security	2012–2019
International Workshop on Simplifying Complex Networks for Practitioners	2014–2015

Chair

Asia Joint Conference on Information Security	2017
International Conference on Software Security and Assurance	2015–2018
International Workshop on Simplifying Complex Networks for Practitioners	2014

Editorial Board Member

IEEE Consumer Electronics Magazine	2015–Present
KSII Transactions on Internet and Information Systems	2017–Present
International Journal of Privacy and Health Information Management	2012–Present
International Journal of Computer & Software Engineering	2016–Present

HONOURS AND
AWARDS

The 2nd prize, Cybersecurity research competition	2018
The best impacts, joint award, IEEE Consumer Electronics Magazine	2017
The excellent paper award, ISS	2017
The 1st prize, Cybersecurity research competition	2017
The award for research excellence, Sungkyunkwan University	2016–2018
The runner-up award, ICSSA 2016	2016
The best paper award, CISC 2016	2016
The Korean Ministry of Interior award for research excellence, NETSEC-KR 2016	2016
The best paper award, DC2 2016	2016
The best student paper award, ICCSA 2015	2015
The best paper award, DC2 2015	2015
The best paper award, WISA 2014	2014
The runner-up award, SIMPEX 2014	2014
The 2nd place winner of the Facebook Hackathon, University of British Columbia	2012
NSERC Postdoctoral Fellowship Award, NSERC ISSNet	2012–2013
Research Studentship, Northrop Grumman Corporation	2010–2011
Silver Medal in Samsung Electronics Annual Award, Samsung Electronics	2007

Yujin Kwon, **Hyounghshick Kim**, Yung Yi and Yongdae Kim, “An Eye for an Eye: Economics of Retaliation in Mining Pools”, *AFT: The 1st ACM conference on Advances in Financial Technologies*, 2019.

Yuri Son, Geumhwan Cho, **Hyounghshick Kim** and Simon Woo, “Understanding Users Risk Perceptions about Personal Health Records Shared on Social Networking Services”, *ASIACCS: The 12th ACM Asia Conference on Computer and Communications Security*, 2019.

Yujin Kwon, **Hyounghshick Kim**, Jinwoo Shin and Yongdae Kim, “Bitcoin vs. Bitcoin Cash: Co-existence or Downfall of Bitcoin Cash?”, *S&P: The 40th IEEE Symposium on Security and Privacy*, 2019.

Mahdi D Firoozjaei, Minchang Kim, Jaeseung Song and **Hyounghshick Kim**, “O2TR: Offline OTR Messaging System under Network Disruption”, *Computers & Security*, 2019.

Jusop Choi, Jaegwan Yu, Sangwon Hyun and **Hyounghshick Kim**, “Digital forensic analysis of encrypted database files in instant messaging applications on Windows operating systems”, *DFRWS EU: Digital Forensic Research Workshop EU*, 2019.

Muhammad Ejaz Ahmed, Saeed Ullah and **Hyounghshick Kim**, “Statistical Application Fingerprinting for DDoS Attack Mitigation”, *IEEE Transactions on Information Forensics and Security*, 2019.

Humberto Cervantes, Rick Kazman, Jungwoo Ryoo, Junsung Cho, Geumhwan Cho, **Hyounghshick Kim** and Jina Kang, “Data-driven selection of application frameworks during architectural design”, *HICSS: The 52nd Hawaii International Conference on System Sciences*, 2019.

Julian Rauchberger, Sebastian Schrittwieser, Tobias Dam, Robert Luh, Damjan Buhov, Gerhard Pötzelsberger and **Hyounghshick Kim**, “The Other Side of the Coin: A Framework for Detecting and Analyzing Web-based Cryptocurrency Mining Campaigns”, *ARES: The 13th International Conference on Availability, Reliability and Security*, 2018.

DaeHun Nyang, **Hyounghshick Kim**, Woojoo Lee, Sung-bae Kang, Geumhwan Cho, Mun-Kyu Lee and Aziz Mohaisen, “Two-Thumbs-Up: Physical Protection for PIN Entry Secure against Recording Attacks”, *Computers & Security*, 2018.

Ian Oakley, Jun Ho Huh, Junsung Cho, Geumhwan Cho, MD. Rasel Islam and **Hyounghshick Kim**, “The Personal Identification Chord: A Four Button Authentication System for Smartwatches”, *ASIACCS: The 11th ACM Asia Conference on Computer and Communications Security*, 2018.

Youngbae Jeon, Minchul Kim, Hyunsoo Kim, **Hyounghshick Kim**, Jun Ho Huh and Ji Won Yoon, “I’m Listening to your Location! Inferring User Location with Acoustic Side Channel”, *WWW: The 27th International World Wide Web Conference*, 2018.

Eunjo Lee, Jiyoung Woo, **Hyounghshick Kim** and Huy Kang Kim, “No Silk Road for Online Gamers!: Using Social Network Analysis to Unveil Black Markets in Online Games”, *WWW: The 27th International World Wide Web Conference*, 2018.

Sangwon Hyun, Jinyoung Kim, **Hyounghshick Kim**, Jaehoon Jeong, Susan Hares, Linda Dunbar and Adrian Farrel, “Interface to Network Security Functions for Cloud-based Security Services”, *IEEE Communications Magazine*, 2018.

Soyoung Kim, Sora Lee, Geumhwan Cho, Muhammad Ejaz Ahmed, Jaehoon Paul Jeong and **Hyounghshick Kim**, “Preventing DNS amplification attacks using the history of DNS queries with SDN”, *ESORICS: The 22nd European Symposium on Research in Computer Security*, 2017.

Jong-Hyouk Lee and **Hyounghshick Kim**, “Security and Privacy Challenges in the Internet of Things”, *IEEE Consumer Electronics Magazine* (selected as Best Impacts, Joint Award), 2017.

Geumhwan Cho, Jun Ho Huh, Junsung Cho, Seongyeol Oh, Youngbae Song and **Hyounghshick Kim**, “SysPal: System-guided Pattern Locks for Android”, *S&P: The 38th IEEE Symposium on Security and Privacy*, 2017.

Jun Ho Huh, **Hyounghshick Kim**, Rakesh B. Bobba, Konstantin Beznosov and Swathi Sri V Rayala, “I’m too busy to reset my LinkedIn password: On the effectiveness of password reset emails”, *CHI: The 35th ACM SIGCHI Conference on Human Factors in Computing Systems*, 2017.

Seunghun Cha, Sungsu Kwag, **Hyounghshick Kim** and Jun Ho Huh, “Boosting the Guessing Attack Performance on Android Lock Patterns with Smudge Attacks”, *ASIACCS: The 10th ACM Asia Conference on Computer and Communications Security*, 2017.

- Junsung Cho, Jaegwan Yu, Sanghak Oh, Jungwoo Ryoo, Jaeseung Song and **Hyounghick Kim**, “Wrong Siren! A location spoofing attack on indoor positioning systems: the Starbucks case study”, *IEEE Communications Magazine*, 2017.
- Jun Ho Huh, Saurabh Verma, Swathi Sri V Rayala, Rakesh Bobba, Konstantin Beznosov and **Hyounghick Kim**, “I Don’t Use Apple Pay Because Its Less Secure : Perception of Security and Usability in Mobile Tap-and-Pay”, *USEC: The 5th Usable Security Conference*, 2017.
- Andrea Bianchi, Ian Oakley and **Hyounghick Kim**, “PassBYOP: Bring Your Own Picture for Securing Graphical Passwords”, *IEEE Transactions on Human-Machine Systems*, 2016.
- Eunjo Lee, Jiyoung Woo, **Hyounghick Kim**, Aziz Mohaisen and Huy Kang Kim, “You are a Game Bot!: Uncovering game bots in MMORPGs via self-similarity in the wild”, *NDSS: The 23rd Network and Distributed System Security Symposium*, 2016.
- Jun Ho Huh, Seongyeol Oh, **Hyounghick Kim**, Konstantin Beznosov, Apurva Mohan, and S. Raj Rajagopalan, “Surpass: System-initiated user-replaceable passwords”, *CCS: The 22nd ACM Conference on Computer and Communications Security*, 2015.
- Jun Ho Huh, **Hyounghick Kim**, Rakesh B. Bobba, Masooda Bashir and Konstantin Beznosov, “On the Memorability of System-generated PINs: Can Chunking Help?”, *SOUPS: The 11st Symposium On Usable Privacy and Security*, 2015.
- Jaeseung Song, **Hyounghick Kim** and Soojin Park, “Enhancing Conformance Testing using Symbolic Execution for Network Protocols”, *IEEE Transactions on Reliability*, 2015.
- Eunhyun Kim, Kyung-won Park, **Hyounghick Kim** and Jaeseung Song, “Design and analysis of enumeration attacks on finding friends with phone numbers: a case study with KakaoTalk”, *Computers & Security*, 2015.
- Youngbae Song, Geumhwan Cho, Seongyeol Oh, **Hyounghick Kim** and Jun Ho Huh, “On the Effectiveness of Pattern Lock Strength Meters Measuring the Strength of Real World Pattern Locks”, *CHI: The 33rd ACM SIGCHI Conference on Human Factors in Computing Systems*, 2015.
- Eunhyun Kim, Kyung-won Park, **Hyounghick Kim** and Jaeseung Song, “I’ve Got Your Number: Harvesting users personal data via contacts sync for the KakaoTalk messenger”, *WISA: The 15th International Workshop on Information Security Applications* (Selected as best paper), 2014.
- Hyounghick Kim** and Ross Anderson, “An Experimental Evaluation of Robustness of Networks”, *IEEE Systems Journal*, Vol. 7(2), 2013.
- Antoine Boutet, **Hyounghick Kim** and Eiko Yoneki, “What’s in Twitter: I Know What Parties are Popular and Who You are Supporting Now!”, *ASONAM: The 4th IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*, 2012.
- Hyounghick Kim**, Jon Crowcroft and Fernando M.V. Ramos, “Efficient Channel Selection Using Hierarchical Clustering”, *WoWMoM: The 13th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks*, 2012.
- John Tang, **Hyounghick Kim**, Cecilia Mascolo and Mirco Musolesi, “STOP: Socio-Temporal Opportunistic Patching of Short Range Mobile Malware”, *WoWMoM: The 13th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks*, 2012.
- Antoine Boutet, **Hyounghick Kim** and Eiko Yoneki, “Whats in Your Tweets? I Know Who You Supported in the UK 2010 General Election”, *ICWSM: The 6th International AAAI Conference on Weblogs and Social Media*, 2012.
- Hyounghick Kim** and Jun Ho Huh, “PIN selection policies: are they really effective”, *Computers & Security*, Vol. 31(4), 2012.
- Hyounghick Kim**, John Tang and Ross Anderson, “Social Authentication: Harder than it Looks”, *FC: The 16th IFCA International Conference on Financial Cryptography and Data Security*, 2012.
- Hyounghick Kim**, John Tang, Ross Anderson and Cecilia Mascolo, “Centrality Prediction in Dynamic Human Contact Networks”, *Computer Networks*, Vol. 56(3), 2012.
- Hyounghick Kim** and Ross Anderson, “Temporal Node Centrality in Complex Networks”, *Physical Review E*, Vol. 85(2), 2012.
- Hyounghick Kim**, Ji Won Yoon and Jon Crowcroft, “Network Analysis of Temporal Trends in Scholarly Research Productivity”, *Journal of Informetrics*, Vol. 6(1), 2012.

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Hyounghick Kim and Jun Ho Huh, “Detecting DNS Poisoning Based Phishing Attacks from their Network Performance Characteristics”, *Electronics Letters* (Selected as a highlight), Vol. 47(11), 2011.

Ji Won Yoon, **Hyounghick Kim** and Jun Ho Huh, “Hybrid Spam Filtering for Mobile Communication”, *Computers & Security*, Vol. 29(4), 2010.

Sanghoon Jeon, **Hyounghick Kim**, Minsoo Kim, Kyungwon Park, Junsung Cho and Jaegwan Yu, “Method of sharing key between devices using physical access restriction”, *US Patent* (10298557B2), 2019.

Bogyeong Kang, **Hyounghick Kim**, Youngbae Song, Jin-A Kang, Jung-Je Son and Duckey Lee, “Method and apparatus for supporting login through user terminal”, *US Patent* (9602506B2), 2017.

Hyounghick Kim and S. Jae Oh, “Method of and Apparatus for Sharing Secret Information between Devices in Home Network”, *EP Patent* (2181521B1), 2016.

Seong-Ho Cho and **Hyounghick Kim**, “Authentication information management method in home network and an apparatus therefor”, *EP Patent* (2264940B1), 2016.

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Wonseok Kwon and **Hyounghick Kim**, “Digital rights management method and apparatus”, *US Patent* (8931104), 2015.

Hyounghick Kim, “Method and System for Providing DRM License”, *US Patent* (8805742), 2014.

Hyounghick Kim, Seongho Cho, Ho-Yeon Park, Dongshin Jung and Wonseok Kwon, “Method and apparatus for generating a mashup graph, and method and apparatus for recommending mashup services”, *US Patent* (8813102), 2014.

Hyounghick Kim and Myungsoo Chang, “Method and apparatus for providing content service”, *US Patent* (8582759), 2013.

Hyounghick Kim and Sanghyeon Kim, “Apparatus and Method for Providing Domain Information”, *US Patent* (8526445), 2013.

Hyounghick Kim and Joo-yeol Lee, “Method and apparatus of ensuring security of communication in home network”, *US Patent* (8464055), 2013.

Seong-Ho Cho and **Hyounghick Kim**, “Method and apparatus for managing authentication information in home network”, *US Patent* (8347079), 2013.

Hyounghick Kim, Kyung-mo Park and Myungsoo Chang, “Device and method for providing video stream having integrity”, *US Patent* (8185742), 2012.

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Kyung-mo Park, S. Jae Oh, **Hyounghick Kim** and Yungsun Ryu, “Apparatus and Method for Providing Security Service in Home Network”, *US Patent* (8060739), 2011.

Hyounghick Kim, Myungsoo Chang and Sanghyeon Kim, “Method and apparatus for providing content service”, *US Patent* (8019080), 2011.

Hyounghick Kim, “Method and apparatus for electronic commerce using digital ticket to provide anonymity” *US Patent* (7730314), 2010.

REFEREES

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