

# Daehee Jang

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## Education

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- KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY (KAIST)** ..... Daejeon, South Korea
- *Ph.D.* in Graduate School of Information Security, School of Computing 8/2014 - 2/2019
  - *M.S.* in Graduate School of Information Security, School of Computing 3/2012 - 2/2014
- HANYANG UNIVERSITY** ..... Seoul, South Korea
- *B.S* in school of computer engineering 3/2005 - 2/2012 (w/ army service)

## Work Experience

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- SOOSANINT** ..... Seoul, South Korea
- *Security Consultant*, eReD Security Solution Project 12/2018 - 3/2019
- SUNGSHIN UNIVERSITY** ..... Seoul, South Korea
- *Part-time lecturer*, 2017 winter semester (BI02700. Introduction to Web Security) 1/2017 - 2/2017
- NSHC** ..... Seoul, South Korea
- *Senior Security Researcher*, Red Alert Team 1/2015 - 7/2015

## Remarks

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### Sole Founder of <http://pwnable.kr> wargame (Since 2014)

- > 30,000 international users, 65,000 Google Search Results
- > Education content of Arizona State University (Prof. Adam Dupe)
  - “Introduction to pwnable.kr wargame” (<https://youtu.be/qGt-00OAFcM>)
- > Education content of KITRI BoB Program

### Hacking Competition (CTF) Challenge Author/Organizer

- > Samsung CTF 2017, 2018 Organizing Team
- > CODEGATE CTF 2017 Challenge Author
- > SECUINSIDE CTF 2017 Challenge Author

## Publications

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- "POLaR: Per-allocation Object Layout Randomization", Jonghwan Kim, **Daehee Jang**, Yunjong Jeong, Brent Byunghoon Kang. (*IEEE/IFIP International Conference on Dependable Systems and Networks 2019*)
- "Rethinking Anti-Emulation Techniques for Large-Scale Software Deployment", **Daehee Jang**, Yunjong Jung, Sungman Lee, Minjoon Park, Donguk Kim, Kuenhwan Kwak, Brent Byunghoon Kang. (*ELSEVIER Computers and Security Journal 2019*)
- "KI-Mon ARM: A Hardware-assisted Event-triggered Monitoring Platform for Mutable Kernel Object", H. Lee, H. Moon, I. Heo, **D. Jang**, J. Jang, K. Kim, Y. Paek, and B. Kang. (*IEEE Transactions on Dependable and Secure Computing 2019*)
- "SGX-LEGO: Fine-Grained SGX Controlled-Channel Attack and its Countermeasure", Deokjin Kim, **Daehee Jang (co-first)**, Minjoon Park, Yunjong Jung, Jonghwan Kim, Seokjin Choi, Brent Byunghoon Kang. (*ELSEVIER Computers and Security Journal 2018*)
- "Emulator Detection Techniques for Commercially Deployed Software", **Daehee Jang**, Yunjong Jung, Seongman Lee, Minjoon Park, Donguk Kim, Kuenhwan Kwak (*World Conference on Information Security Applications 2018*)
- "Domain Isolated Kernel: A lightweight sandbox for untrusted kernel extensions", Valentin J.M. Manes, **Daehee Jang**, Brent Byunghoon Kang, Chanho Ryu. (*ELSEVIER Computers and Security Journal 2017*)
- "S-OpenSGX: A System-level Platform for Exploring SGX Enclave-Based Computing", Changho Choi, Nohyun Kwak, Jinsoo Jang, **Daehee Jang**, Kuenwhee Oh, Kyungsoo Kwag, Brent Byunghoon Kang (*ELSEVIER Computers and Security Journal 2016*)
- "Efficient Kernel Integrity Monitor Design for Commodity Mobile Application Processors", Ingoo Heo, **Daehee Jang**, Hyungon Moon, Hansu Cho, Seungwook Lee, Brent Byunghoon Kang, and Yunheung Paek. (*Journal of Semiconductor Technology and Science 2015*)
- "ATRA: Address Translation Redirection Attack against Hardware-based External Monitors", **D.Jang**, H Lee, M. Kim, D. H. Kim, D. G. Kim and B. Kang. (*ACM Conference on Computer and Communications Security 2014*)
- "KI-Mon: A Hardware-assisted Event-triggered Monitoring Platform for Mutable Kernel Object", H. Lee, H. Moon, **D. Jang**, K. Kim, J. Lee, Y. Paek and B. Kang. (*USENIX Security 2013*)
- "DNS Spoofing Protection System for Wi-Fi Networks", **Daehee Jang**, Yongsu Park. (*Conference of Korean Institute of Information Scientists and Engineers 2012*)

## International Hacking Competition Awards

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- 9th place in 2018 SECCON Hacking Competition Finals (BlueBananaKing, four person team)
- 8th place in 2017 TrendMicro Hacking Competition Finals (BrentKawaii, four person team)
- 2nd place in 2016 SECCON Hacking Competition Finals (PwnPineappelApplePwn, four person team)  
> <http://www.boannews.com/media/view.asp?idx=53251>
- 5th place in 2016 DEFCON Hacking Competition Finals (KaisHackGoN, 16 person team)  
> <http://www.etnews.com/20160802000228>
- 9th place in 2016 CODEGATE Hacking Competition Finals (KaSec, four person team)  
> <http://news.mk.co.kr/newsRead.php?no=318253&year=2016>
- 9th place in 2015 CODEGATE Hacking Competition Finals (Alternatives, four person team)  
> <http://www.boannews.com/media/view.asp?idx=45889>
- 13th place in 2015 SECCON Hacking Competition Finals (KaSec, four person team)  
> <http://www.ddaily.co.kr/news/article.html?no=139921>
- 8th place in 2013 DEFCON Hacking Competition Finals (Alternatives, eight person team)  
> <http://www.boannews.com/media/view.asp?idx=37199>

## Domestic Hacking Competition Awards

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- 3rd place in 2018 Korea CCE Hacking Competition Finals (BraveBluKat, four person team)  
> 5,000,000 KRW prize, <https://www.boannews.com/media/view.asp?idx=74271>
- 2nd place in 2017 CCE Hacking Competition Finals (에이 베이 베이 베이, five person team)  
> 6,000,000 KRW prize, <http://www.boannews.com/media/view.asp?idx=58207>
- **Winner** of 2015 WHITEHAT Hacking Competition Finals (아몰랑, four person team)  
> 20,000,000 KRW prize, <http://www.boannews.com/media/view.asp?idx=48326>
- 4th place in 2015 KISA Hacking Competition Finals (KaSec, four person team)  
> 2,000,000 KRW prize, <https://www.yna.co.kr/view/AKR20151130140100017>
- 3rd place in 2014 WHITEHAT Hacking Competition Finals (Alternatives, four person team)  
> 8,000,000 KRW prize, <http://www.boannews.com/media/view.asp?idx=44060>
- 7th place in 2013 KISA Hacking Competition Finals (Alternatives, four person team)  
> <http://www.boannews.com/media/view.asp?idx=36730>

## Academic Awards

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- Excellence Award in 2018 Korea Information Security Paper Competition  
> 1st author. 1,000,000 KRW prize.
- **Grand Prize Winner** of 2017 Information Security Paper Competition  
> 1st author. 5,000,000 KRW prize. **Introduced at KAIST main news.**  
> [http://www.kaist.ac.kr/\\_prog/\\_board/?mode=V&no=73601&code=kaist\\_news](http://www.kaist.ac.kr/_prog/_board/?mode=V&no=73601&code=kaist_news)
- Excellence Award in 2017 Korea Information Security Paper Competition  
> 2nd author. 1,000,000 KRW prize.
- Excellence Award in 2017 Korea Information Security Paper Competition  
> 1st author. 1,000,000 KRW prize.
- 2016 NAVER Ph.D. Fellowship Award  
> 5,000,000 KRW prize.

## Bug Bounty Awards (Sole activity)

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- KISA 2018 Software 0-day Bug Bounty Award
  - > Arbitrary Code Execution via Heap Overflow in KMPlayer FLV Parser (CVE-2018-5200)
  - > 4,300,000 KRW prize, <https://nvd.nist.gov/vuln/detail/CVE-2018-5200>
  - > [https://www.boho.or.kr/krcert/secNoticeView.do?bulletin\\_writing\\_sequence=30113](https://www.boho.or.kr/krcert/secNoticeView.do?bulletin_writing_sequence=30113)
- Information Security Elite Nomination in KISA 2016 Awards Ceremony
  - > Special Prize for Hancore Office Bug Bounty
  - > [http://www.zdnet.co.kr/news/news\\_view.asp?article\\_id=20161223171127](http://www.zdnet.co.kr/news/news_view.asp?article_id=20161223171127)
- KISA 2016 Software 0-day Bug Bounty Award
  - > Arbitrary Code Execution via Heap Overflow in Hangul (Report number 16-251)
  - > 3,200,000 KRW prize
- KISA 2015 Software 0-day Bug Bounty Award
  - > Arbitrary Code Execution via Heap Use-After-Free in Hangul (Report number 15-621)
  - > 2,400,000 KRW prize
- KISA 2015 Software 0-day Bug Bounty Award
  - > Arbitrary Code Execution via Stack Overflow in Hangul (Report number 15-284)
  - > 1,500,000 KRW prize
- KISA 2015 Software 0-day Bug Bounty Award
  - > Arbitrary Code Execution via Stack Overflow in IPTIME router (Report number 15-074)
  - > 1,800,000 KRW prize

## Invited Talks

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- UNIST Security Lab Invited Speaker (2019)
  - > “0-day attack explained”
- KAIST PLRG Lab Invited Speaker (2019)
  - > “WASM Sandbox Explained”
- ETRI System Security Lab Invited Speaker (2019)
  - > “H/W based Fine Grained Memory Access Control”
- KISA Invited Speaker (2018)
  - > “Explaining Hacking Competition Challenges”
- CODEGATE 2016 Conference Invited Speaker
  - > “Codemap: Visualization tool for software reverse engineering”
  - > <http://www.itdaily.kr/news/articleView.html?idxno=77596>
- Hong Kong Cyber Security Symposium 2015 Speaker
  - > “Android Mobile Malware Threats”
  - > <http://www.dailysecu.com/?mod=news&act=articleView&idxno=9049>
- Dankook Univ. Security Lab Invited Speaker (2014)
  - > Topic 1: “Applying Kernel exploit (CVE-2014-3153) to x86 Ubuntu 13.04”
  - > Topic 2: “OS kernel debugging with IDA pro”

## Teaching Assistant Activities

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2018 Summer. KAIST-LG Security Education TA (Prof. Brent Byunghoon Kang)

2017 Fall. Virtualization Security (IS-632) Class TA (Prof. Brent Byunghoon Kang)

2016 Fall. Binary Analysis and Software Security (IS-561) Class TA (Prof. Sang Kil Cha)

2016 Summer. Introduction to System Security (IS-522) Class TA (Prof. Brent Byunghoon Kang)

2015 Winter. KAIST-Samsung Kernel Security Education TA (Prof. Brent Byunghoon Kang)

2015 Summer. KAIST-SKT Cyber Security Education TA (Prof. Brent Byunghoon Kang)

2014 Winter. KAIST-Samsung Kernel Security Education TA (Prof. Brent Byunghoon Kang)

2014 Fall. Kernel System Security (IS-631) Class TA (Prof. Brent Byunghoon Kang)