

Education

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|-------------------|---|
| 08/2013 – Present | Purdue University , West Lafayette, IN, USA
Ph.D. student in Computer Science
Advisor: Prof. Xiangyu Zhang |
| 09/2010 – 08/2012 | Korea University , Seoul, Korea
M.E. with High Honors in Information Security
Advisor: Prof. Jongsub Moon |
| 03/2003 – 02/2010 | Kwangwoon University , Seoul, Korea
B.E. in Computer Software |

Research Interests

I am interested in web and system security using program analysis techniques. In particular, my current research focus is finding security vulnerabilities in JavaScript web applications using static and dynamic analysis.

Publications | Security and Program Analysis

- Finding Client-side Business Flow Tampering Vulnerabilities**
I Luk Kim, Yunhui Zheng, Hogun Park, Weihang Wang, Wei You, Yousra Aafer, Xiangyu Zhang
The 42nd International Conference on Software Engineering (ICSE 2020)
- AdJust: Runtime Mitigation of Resource Abusing Third-Party Online Ads**
Weihang Wang, I Luk Kim, Yunhui Zheng
The 41st International Conference on Software Engineering (ICSE 2019)
- An improved anonymous authentication scheme for distributed mobile cloud computing services**
Shehzad Ashraf Chaudhry, I Luk Kim, Seungmin Rho, Mohammad Sabzinejad Farash, Taeshik Shon
Cluster Computing, 2019
- AdBudgetKiller: Online Advertising Budget Draining Attack**

- I Luk Kim**, Weihang Wang, Yonghwi Kwon, Yunhui Zheng, Yousra Aafer, Weijie Meng, Xiangyu Zhang
2018 World Wide Web Conference on World Wide Web (**WWW 2018**)
5. **PAD: Programming third-party web advertisement censorship**
Weihang Wang, Yonghwi Kwon, Yunhui Zheng, Yousra Aafer, **I Luk Kim**, Wen-Chuan Lee, Yingqi Liu, Weijie Meng, Xiangyu Zhang, Patrick Eugster
32nd IEEE/ACM International Conference on Automated Software Engineering (**ASE 2017**)
 6. **J-force: Forced execution on javascript**
Kyungtae Kim, **I Luk Kim**, Chung Hwan Kim, Yonghwi Kwon, Yunhui Zheng, Xiangyu Zhang, Dongyan Xu
26th international conference on World Wide Web (**WWW 2017**)
 7. **Design and Implementation of Fuzzing Framework Based on IoT Applications**
Tewodros Legesse Munca, **I Luk Kim**, Taeshik Shon
Wireless Personal Communications (2017)
 8. **A2c: Self destructing exploit executions via input perturbation**
Yonghwi Kwon, Brendan Saltaformaggio, **I Luk Kim**, Kyu Hyung Lee, Xiangyu Zhang, Dongyan Xu
24th Network and Distributed System Security Symposium (**NDSS 2017**)
 9. **Apex: automatic programming assignment error explanation**
Dohyeong Kim, Yonghwi Kwon, Peng Liu, **I Luk Kim**, David Mitchel Perry, Xiangyu Zhang, Gustavo Rodriguez-Rivera
ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications (**OOPSLA 2016**)
 10. **A novel approach to detection of mobile rogue access points**
I Luk Kim, Jungtaek Seo, Taeshik Shon, Jongsub Moon
Security and Communication Networks, 2014

Publications | Cyber-physical systems for geospatial data

11. **MyGeoHub - A sustainable and evolving geospatial science gateway**
Rajesh Kalyanam, Lan Zhao, Carol Song, Larry Biehl, Derrick Kearney, **I Luk Kim**, Jaewoo Shin, Nelson Villoria, Venkatesh Merwade
Future Generation Computer Systems, 2019
12. **Bridging the gap between remotely sensed big data and watershed hydrologic models**

- Lan Zhao, Adnan Rajib, Venkatesh Merwade, Jaewoo Shin, I Luk Kim, Carol X Song, Heather E Golden, Charles Lane
AGU Fall Meeting, 2018
13. **MyGeoHub Geospatial Gateway**
Rajesh Kalyanam, Lan Zhao, Rob Campbell, Derrick Kearney, **I Luk Kim**, Jaewoo Shin, Larry Biehl, Wei Wan, CX Song
Demo at Gateways 2017 conference, Ann Arbor, MI, 2017
 14. **GABBs-Reusable Geospatial Data Analysis Building Blocks for Science Gateways**
Lan Zhao, Carol Song, Rajesh Kalyanam, Larry Biehl, Robert Campbell, Leif Delgass, Derrick Kearney, Wei Wan, Jaewoo Shin, **I Luk Kim**, Carolyn Ellis
9th International Workshop for Science Gateways (**IWSG 2017**)
 15. **Bridging Hydroinformatics Services Between HydroShare and SWATShare**
V Merwade, L Zhao, CX Song, DG Tarboton, JL Goodall, M Stealey, A Rajib, MM Morsy, PK Dash, B Miles, **I Luk Kim**
AGU Fall Meeting Abstracts, 2016
 16. **SWATShare - A web platform for collaborative research and education through online sharing, simulation and visualization of SWAT models**
Mohammad Adnan Rajib, Venkatesh Merwade, **I Luk Kim**, Lan Zhao, Carol Song, Shandian Zhe
Environmental Modelling & Software, 2016
 17. **SWATShare - A Platform for Collaborative Hydrology Research and Education with Cyber-enabled Sharing, Running and Visualization of SWAT Models**
MA Rajib, Venkatesh Merwade, C Song, Lan Zhao, I Luk Kim, Shandian Zhe
AGU Fall Meeting Abstracts, 2014

Work Experience

- 08/2014 – **Purdue University**
Present | Research Assistant
- Perform research in the area of web & system security using program analysis, and online advertisement eco-system.
 - Designed an online advertising budget draining attack
 - Developed forced JavaScript execution engine using Chrome V8
 - 7 publications in top-tier conferences (2 ICSE, OOPSLA, 2 WWW, NDSS, ASE)
- 08/2013 – **Rosen Center for Advanced Computing (RCAC), Purdue University**
Present | Graduate Assistant

- [SWATShare](#) : Designed and developed an online platform that enables users to self-publish, share hydrologic models, and provides computing clusters for intensive calibration work.
 - [SWATFlow](#) : Designed and developed a visualization platform providing high resolution river flow information.
 - [HydroGlobe](#) : Designed and developed a Notebook-based application providing post-processing and visualization for earth observation datasets.
 - 7 publications in conferences and journals
- 08/2012 – **Information Communication Security (ICS) Lab**, Ajou University
08/2016 Research Assistant
- Performed research in the area of secure communication system for mobile and IoT applications
 - 2 publications in journals
- 08/2012 – **Center for Information Security Technology (CIST)**, Korea University
05/2013 Research Assistant
- Implemented a file system forensic analysis tool
 - Performed research of cyber-attack classification method for abnormality alarm based on whitelist
 - Performed research of security technique for platform, contents and service on open mobile environment based on Android
- 09/2010 – **System & Network Security Lab**, Korea University
08/2012 Research Assistant
- Developed a network simulation tool for virtual cyber-attack and defense mechanism
 - Researched a study on incapacitation algorithm for automatic analysis of packed malware with machine learning technique
 - Designed secured cloud computing architecture layer
 - Researched a detection mechanism of mobile rogue access point with machine learning technique
 - 1 publication in journal
- 03/2011 – **Graduate School of Information Security**, Korea University
06/2012 System & Network Administrator
- Managed web and data servers

04/2004 – **Republic of Korea Air Force**
07/2007 Military Service
- Served and discharged from Airforce as Signaler, Sergeant
- Managed the intranet system in an Airforce base

Awards and Honors

2012 **Korea University President's Award**
Graduate with High Honors

2012 **Korea University Scholarship**
Merit-based scholarship

2012 **Brain Korea (BK) 21 Scholarship**
Competitive research and merit-based scholarship

2011 **Information Technology Research Center (ITRC) Scholarship**
Competitive research and merit-based scholarship from renowned national research institution

2004, 2008, 2009 **Kwangwoon University Scholarship**
Merit-based scholarship for 5 semesters

1999 **Bronze Prize**
The Information Olympiad, Seoul Seongbuk District Office of Education

1998 **Bronze Prize**
The 9th Korea Computer Competition, Korea Association of Hakwon & Soongsil University