

Hyungsub Kim

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Research Interests

My research interests include all aspects of computer security and privacy, including the web, networks, and systems.

Education

- 2018–Present **PhD student in Computer Science, Purdue University**, IN, the USA, *GPA – .*
- 2013–2015 **M.S. in Computer Science and Engineering, POSTECH**, Pohang, South Korea, *GPA – 3.8/4.3.*
o Thesis: "Privacy Threats in HTML5 Geolocation API: Case Studies and Countermeasures"
- 2011–2013 **B.S. in School of Computer Science, University of Seoul**, Seoul, South Korea, *GPA – 4.15/4.5.*
- 2005–2011 **Major in Mathematics, Chonnam National University**, Gwangju, South Korea, *GPA – 3.27/4.5.*
- 2002–2005 **Major in Information Processing, Pyeongchon Information Industry High School**, Anyang, South Korea.

Publications

Conference Papers

- [1] **Inferring Browser Activity and Status Through Remote Monitoring of Storage Usage**
Hyungsub Kim, Sangho Lee, and Jong Kim
In the Proceedings of the 32nd Annual Computer Security Applications Conference (**ACSAC**), Los Angeles, California, USA, December 5-9, 2016.
- [2] **Identifying Cross-origin Resource Status Using Application Cache**
Sangho Lee, **Hyungsub Kim**, and Jong Kim
In the Proceedings of the 22nd Network and Distributed System Security Symposium (**NDSS**), San Diego, California, USA, February 8-11, 2015.
- [3] **Exploring and mitigating privacy threats of HTML5 geolocation API**
Hyungsub Kim, Sangho Lee, and Jong Kim
In the Proceedings of the 30th Annual Computer Security Applications Conference (**ACSAC**), New Orleans, Louisiana, USA, December 8-12, 2014.

Thesis

- [1] **Privacy Threats in HTML5 Geolocation API: Case Studies and Countermeasures**
Master's Thesis, Department of Computer Science and Engineering, POSTECH, 2015.

Employment History

- 2015–2018 **Researcher, 3rd R&D Institute (Intelligence, Surveillance and Reconnaissance), Agency for Defense Development (ADD)**, DaeJeon, South Korea.
- 2013–2015 **Research Assistant, High Performance Computing Laboratory, Pohang University of Science and Technology (POSTECH)**, Pohang, South Korea.
Supervisor: Prof. Jong Kim
- 2013 **Research Assistant, Software Engineering Lab, POSTECH**, Pohang, South Korea.
Supervisor: Prof. Kyo-Chul Kang
- 2012–2013 **Research Assistant, Software Engineering Lab, University of Seoul**, Seoul, South Korea.
Supervisor: Prof. Byung-jeong Lee

- 2007–2009 **Auxiliary Policeman**, *Gwangju Seobu Police Station, Gwangju Metropolitan Police Agency*, Gwangju, South Korea.
Mandatory military service
- 2006–2007 **Research Assistant**, *Environmental Systems Engineering Lab, Gwangju Institute of Science and Technology*, Gwangju, South Korea.
Supervisor: Prof. Joon Ha Kim

Research Projects

- 2017–2018 **Automatic Video-based Target Detection and Classification**, *Agency for Defense Development (ADD)*.
 - researched target classification, localization, and detection by using deep learning such as Convolutional Neural Networks (CNNs)
- 2015–2017 **Real-time Target Geo-positioning on multiple Videos**, *Agency for Defense Development (ADD)*.
 - developed image matching algorithms for highly oblique Full Motion Videos (1080p, 30Hz)
- 2014–2015 **Context-aware Unified IoT Platform for Security and Privacy**, *Samsung*.
 - invented anti-fingerprinting methods for IoT security
- 2014–2015 **Resilient Cyber-Physical Systems Research**, *Ministry of Science, ICT and Future Planning (MSIP)*.
 - researched new attack and error models for Cyber-Physical Systems (CPS)
- 2013 **Next Generation Web Browser**, *Samsung*.
 - implemented fine-grained sandboxing for a next generation web browser

Honors and Awards

Ross Fellowship, Purdue University Graduate School, 2018.

ACSAC Student Conferenceship Award (US\$1,200), New Orleans, Louisiana, USA, December, 2014.

Best Student Presentation Award, POSTECH CSE Student Workshop, 2014.

Semester High Honors, 2011 and 2012 2nd semester, University of Seoul.

Semester High Honors, 2007 2nd semester, Chonnam National University.

Ministry of Commerce, Industry and Energy grand prize (US\$2,600), high school competitions in the field of computer science, 2004.

Technical Experiences

- 2014 ACSAC paper, **developed fine-grained permission and location models, and by inspecting the location sensitivity of each web page**. JAVA, Android
- 2013 Advanced Operating System, **modified Linux kernel to support I/O alignment for solid-state drives (SSD)**. C

Technical Skills

Programming Languages

- C, C++, C#, JAVA, Python, TensorFlow, MATLAB, JavaScript, HTML (good)
- Shell scripts (Bash and PowerShell), SQL, Maple, LaTeX (intermediate)

Miscellaneous Availabilities

- Linux, SubVersion/Git

Teaching Experience

- 2014 Fall **Teaching assistant** Software Design Methods (CSED332), POSTECH, Pohang, South Korea.
 - Planned, taught, and graded course term project assignments about implementing a database-management system (DBMS).

- 2009 Fall **Instructor** Computer Science Curriculum for Elementary School, Wolpyeong Elementary School, Jangseong County, South Korea.
- Taught students for acquisition of office automation certificate of qualification relating to computer.

Talks

- [1] **Inferring Browser Activity and Status Through Remote Monitoring of Storage Usage**, *32nd Annual Computer Security Applications Conference (ACSAC)*, Los Angeles, California, USA, Dec 8, 2016.
- [2] **Exploring and Mitigating Privacy Threats of HTML5 Geolocation API**, *30th Annual Computer Security Applications Conference (ACSAC)*, New Orleans, Louisiana, USA, Dec 11, 2014.
- [3] **I Know the Shortened URLs You Clicked on Twitter: Inference Attack using Public Click Analytics and Twitter Metadata**, *Workshop among Asian Information Security Labs (WAIS)*, Shanghai, China, Jan 10, 2014.

Activities

Professional Activities

- 2014 Participating in the international World Wide Web Conference (WWW) as a volunteer, April, 7-11, Seoul, South Korea.
- Helped organization and progress of the conference

Service to Community

- 2006–2007 Volunteering at free tutoring for poor students at middle school, Gwangju, South Korea.
- 6 hours per week of volunteer service to the community through teaching underprivileged students

Extracurricular Activities

- 2005–2007 Literature discussion club, Chonnam National University, Gwangju, South Korea.
- Wrote one poetry per week, discussed opinions on the poetry, and applied lessons to real life
- 2002–2004 Computer science club, Pyeongchon Information Industry High School, Anyang, South Korea.
- Studied programming languages (C and C++), data structures, and algorithms for computer science competitions