

Weilin Xu 许伟林

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Education

- 2013.8 – present** *University of Virginia, U.S.*
Ph.D. candidate in Computer Science.
Co-Advisors: Prof. David Evans, Prof. Yanjun (Jane) Qi
- 2008.9 – 2012.6** *Beijing University of Posts and Telecommunications (BUPT), China*
B.E, Computer Science and Technology (Rank: 27/316)

Positions

- 2014.5 – present** Research Assistant in Security Research Group and Machine Learning Group, UVa
- 2013.8 – 2014.5** TA, CS4414: Operating Systems, Prof. David Evans, University of Virginia
- 2012.7 – 2013.8** Engineer, Network and Information Security Lab, Tsinghua University

Research Interests

- System Security, Machine Learning

Research Experience

- 2014.5 – present** Security Research Group and Machine Learning Group, UVa **Research Assistant**
- Doing research on adversarial machine learning.
 - Evaded two state-of-the-art PDF malware classifiers, PDFrate and Hidost by a genetic programming-based method: <http://EvadeML.org>

- 2012.7 – 2013.8** Network and Information Security Lab, Tsinghua University. **Engineer**

Distributed Honeynet Project

- Led a team constructing a nationwide distributed honeynet system, MongoDB database, HPfeeds publish/subscribe protocol, SNMP and Django.
- Honeypots included Dionaea, Kippo, Glastopf and 6Guard.

- 2012.5 – 2012.8** Google Summer of Code 2012, Google, Inc. **Developer**

The Honeynet Project Mentor: Ryan W. Smith

- Designed and developed 6Guard, an efficient and economic IPv6 attack detector.
- Based on signature and honeypot techniques, mainly aiming at THC-IPv6 and Nmap.
- 6Guard was deployed in CNGI-CERNET2 to detect and capture informal traffics.
- The code repository is at <https://github.com/mzweilin/ipv6-attack-detector/>.

- 2011.5 - 2011.8** Google Summer of Code 2011, Google, Inc. **IPv6 Expert**

Nmap Security Scanner Project Mentor: David Fifield

- Worked as an IPv6 Expert (research oriented) aiming at expanding and improving IPv6 support of Nmap, and developing new host discovery methods on IPv6 network.
- Made contributions to some essential IPv6-related features, such as IPv6 raw packet scans, IPv6 unicast host discovery, advanced IPv6 link-local host discovery.
- The code repository is at <https://svn.nmap.org/nmap/>.

- 2010.4 - 2011.4** Innovation Laboratory for Students, BUPT **Team Leader**
- IPv6-to-IPv6 NAT Router Project:**

- Founded NAPT66, an open source project of stateful IPv6-to-IPv6 NAT, implemented on Linux kernel.
- The code repository is at <http://code.google.com/p/napt66/>.
- Invented ‘802.1X Relay’, a client-side method for supporting various proprietary 802.1X-based protocols.
- Developed an embedded IPv6/IPv4 Dual Stack NAT router based on the OpenWrt router OS.
- A project video is available at http://v.youku.com/v_show/id_XMjY4NTAwMTc2.html.

2009.10 - 2010.1 State Key Lab of Networking and Switching, BUPT

Research Assistant

Transparent Data Encryption on Android:

- Evaluated related works, such as the FiST maintained by Prof. Zadok of Stony Brook University.
- Put forward a new scheme based on Linux Kernel VFS layer and implemented a demo.

Publications

- **Weilin Xu**, Yanjun Qi, David Evans. *Automatically Evading Classifiers: A Case Study on PDF Malware Classifiers*. In 23rd Network and Distributed Systems Symposium (NDSS), 2016.
- **Weilin Xu**, Guanglin Xu, Hua Zhang. *802.1X Relay: A new model for authentication of NAT-enabled router*. In 2nd IEEE Pacific-Asia Conference on Circuits, Communications and System, 2010.
- Jianwei Zhuge, Lin Chen, **Weilin Xu**. *Practical Packet Analysis, Chinese 2nd Edition*, Posts & Telecom Press, 2012.

Patents

- Guanglin Xu, **Weilin Xu**, Wushao Wen, Xiaojing Xie. *Method based on packet forwarding for supporting proprietary 802.1X-based protocols in NAT router*, Patent No. CN 201010518735.5.

Professional Affiliations

- Student member of ACM and IEEE
- Contributor of Nmap and The HoneyNet Project

Honors

- First Prize of Creativity Award of BUPT, 2011
(The highest academic award for graduates and undergraduates in BUPT.)
- National Scholarship for Encouragement of China, 2010, 2011
(The highest award for outstanding and inspirational undergraduates.)
- Third-class College Scholarship of BUPT, 2009

Skills

Python, Rust, C/C++, Lua, HTML, SQL, NoSQL, Shell.

References

Assistant Professor Yanjun (Jane) Qi, Ph.D.
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