

Martina Lindorfer

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EDUCATION

Doctor of Technical Sciences (Dr. techn.) July 2011 – November 2015

Vienna University of Technology, Austria

Major: Malware Analysis and Mobile Security

Thesis: *Malware Through the Looking Glass: Malware Analysis in an Evolving Threat Landscape*

Advisor: Priv.-Doz. Dipl.-Ing. Mag.rer.soc.oec. Dr. techn. Edgar Weippl

Master of Science (Dipl.-Ing.) October 2006 – May 2011

Vienna University of Technology, Austria

Major: Software Engineering and Internet Computing

Thesis: *Detecting Environment-Sensitive Malware*

Advisor: Priv.-Doz. Dipl.-Ing. Dr. techn. Engin Kirda

Bachelor of Science (BSc) October 2003 – July 2006

University of Applied Sciences Hagenberg, Austria

Major: Computer and Media Security

Theses: *Aggregate Signatures – Algorithms and Applications*

Integration of Elliptic Curves in the Cryptographic Base Infrastructure of the Utimaco Safeware AG

Advisor: FH-Prof. Dr. Juergen Fuss

EXPERIENCE

Postdoctoral Researcher since April 2016

Computer Security Group, UC Santa Barbara, USA

Researcher January 2013 – December 2015

SBA Research, Vienna, Austria

Visiting Researcher October 2014 – March 2015

Systems Security Lab, Northeastern University, Boston, USA

- Analysis of iOS8 security features
- Data leak detection in mobile app traffic

Research Assistant July 2011 – September 2014

Secure Systems Lab, Vienna University of Technology, Vienna, Austria

- Research as part of PhD studies
- Dynamic malware analysis and detection of Android malware (Andrubis)

Research Intern November 2013

Foundation for Research and Technology – Hellas (FORTH-ICS), Heraklion, Greece

- Detection of malicious Android applications in alternative markets

Research Intern January – May 2013

Fukuda Laboratory, National Institute of Informatics (NII), Tokyo, Japan

- Detection of botnet traffic in backbone networks based on NetFlow data

Research Intern September – November 2009

Multimedia Security Lab, Korea University, Seoul, South Korea

- Development of a Windows executable packer with encryption and compression

Software Engineer, Project Controller July 2006 – December 2008

Underground_8 Secure Computing GmbH, Linz, Austria

- Design and development of a transparent threat management appliance, which filters mail and web traffic for spam and malware

Teaching Assistant

Distributed Systems Technologies, Vienna University of Technology, Vienna, Austria

March – June 2008

Software Engineer (Professional Practical Training)

Utimaco Safeware AG, Linz, Austria

March – June 2006

- Integration of elliptic curve signature and encryption algorithms in the cryptographic base infrastructure of a hard disk encryption suite

PUBLICATIONS

Conferences

Bug Fixes, Improvements, ... and Privacy Leaks - A Longitudinal Study of PII Leaks in Android Apps

Jingjing Ren, Martina Lindorfer, Daniel Dubois, Ashwin Rao, David Choffnes, Narseo Vallina-Rodriguez
Network and Distributed System Security Symposium (NDSS)
San Diego, California, USA, February 2018 (to appear)

Obfuscation-Resilient Privacy Leak Detection for Mobile Apps Through Differential Analysis

Andrea Continella, Yanick Fratantonio, Martina Lindorfer, Alessandro Puccetti, Ali Zand, Christopher Kruegel, Giovanni Vigna
Network and Distributed System Security Symposium (NDSS)
San Diego, California, USA, February 2017

Drammer: Deterministic Rowhammer Attacks on Mobile Platforms

Victor van der Veen, Yanick Fratantonio, Martina Lindorfer, Daniel Gruss, Clementine Maurice, Giovanni Vigna, Herbert Bos, Kaveh Razavi, Cristiano Giuffrida
ACM Conference on Computer and Communications Security (CCS)
Vienna, Austria, October 2016

ReCon: Revealing and Controlling PII Leaks in Mobile Network Traffic

Jingjing Ren, Ashwin Rao, Martina Lindorfer, Arnaud Legout, David Choffnes
International Conference on Mobile Systems, Applications and Services (MobiSys)
Singapore, June 2016

CuriousDroid: Automated User Interface Interaction for Android Application Analysis Sandboxes

Patrick Carter, Collin Mulliner, Martina Lindorfer, William Robertson, Engin Kirda
International Conference on Financial Cryptography and Data Security (FC)
Christ Church, Barbados, February 2016

Marvin: Efficient and Comprehensive Mobile App Classification Through Static and Dynamic Analysis

Martina Lindorfer, Matthias Neugschwandtner, Christian Platzer
Annual International Computers, Software & Applications Conference (COMPSAC)
Taichung, Taiwan, July 2015

AndRadar: Fast Discovery of Android Applications in Alternative Markets

Martina Lindorfer, Stamatis Volanis, Alessandro Sisto, Matthias Neugschwandtner, Elias Athanasopoulos, Federico Maggi, Christian Platzer, Stefano Zanero, Sotiris Ioannidis
Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA)
London, UK, July 2014

Take a Bite – Finding the Worm in the Apple

Martina Lindorfer, Bernhard Miller, Matthias Neugschwandtner, Christian Platzer
International Conference on Information, Communications and Signal Processing (ICICS)
Tainan, Taiwan, December 2013

Lines of Malicious Code: Insights Into the Malicious Software Industry

Martina Lindorfer, Alessandro Di Federico, Federico Maggi, Paolo Milani Comparetti, Stefano Zanero
Annual Computer Security Applications Conference (ACSAC)
Orlando, Florida, USA, December 2012

Detecting Environment-Sensitive Malware

Martina Lindorfer, Clemens Kolbitsch, Paolo Milani Comparetti
International Symposium on Recent Advances in Intrusion Detection (RAID)
Menlo Park, California, USA, September 2011

Workshops

Andrubis – 1,000,000 Apps Later: A View on Current Android Malware Behaviors

Martina Lindorfer, Matthias Neugschwandtner, Lukas Weichselbaum, Yanick Fratantonio,
Victor van der Veen, Christian Platzer
International Workshop on Building Analysis Datasets and Gathering Experience Returns for Security (BADGERS)
Wroclaw, Poland, September 2014

Skin Sheriff: A Machine Learning Solution for Detecting Explicit Images

Christian Platzer, Martin Stuetz, Martina Lindorfer
International Workshop on Security and Forensics in Communication Systems (SFCIS)
Kyoto, Japan, June 2014

Enter Sandbox: Android Sandbox Comparison

Sebastian Neuner, Victor van der Veen, Martina Lindorfer, Markus Huber, Georg Merzdovnik,
Martin Mulazzani, Edgar Weippl
IEEE Mobile Security Technologies Workshop (MoST)
San Jose, California, USA, May 2014

A View to a Kill: WebView Exploitation

Matthias Neugschwandtner, Martina Lindorfer, Christian Platzer
USENIX Workshop on Large-Scale Exploits and Emergent Threats (LEET)
Washington, D.C., USA, August 2013

Miscellaneous

Andrubis: Android Malware Under the Magnifying Glass

Lukas Weichselbaum, Matthias Neugschwandtner, Martina Lindorfer, Yanick Fratantonio,
Victor van der Veen, Christian Platzer
Technical Report, Vienna University of Technology, July 2014

POSTER: Cross-Platform Malware: Write Once, Infect Everywhere

Martina Lindorfer, Matthias Neumayr, Juan Caballero, Christian Platzer
ACM Conference on Computer and Communications Security (CCS)
Berlin, Germany, November 2013

The Red Book: A Roadmap for Systems Security Research

The SysSec Consortium, Evangelos Markatos and Davide Balzarotti (editors), August 2013

HONORS & AWARDS

- Best Paper Award in the CSAW Applied Research Competition for Drammer November 2017
- Travel grant for the Workshop for Women in Cyber Security (CyberW) September 2017
- Pwnie award for Best Privilege Escalation Bug for Drammer July 2017
- Pwnie nomination for Most Innovative Research for Drammer July 2017
- Promotio Sub Auspiciis Praesidentis (graduation with highest honors in Austria) May 2017
- Best Dutch Cyber Security Research Paper (DCSRP) award for Drammer March 2017
- Reward from the Android Security Rewards Program for Drammer November 2016
(CVE-2016-6728, marked as critical)
- Travel grant for the GREPSEC II workshop and IEEE Symposium on Security and Privacy May 2015
- Marshall Plan scholarship for a research exchange with Northeastern University May 2014
- Research fellowship from Clear Sky Ventures January 2014

- SysSec scholarship for a research exchange with FORTH-ICS October 2013
- Google EMEA Anita Borg Memorial Scholarship June 2012
- Finalist for the Google Europe Anita Borg Memorial Scholarship June 2008
- Finalist for the CAST IT security sponsorship award for outstanding bachelor theses November 2007

COMMUNITY SERVICE

Program Committee Member

- Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA) 2016, 2017, 2018
- Workshop on Formal Methods for Security Engineering (ForSE) 2017, 2018
- International Workshop on Innovations in Mobile Privacy and Security (IMPS) 2017
- USENIX Workshop on Offensive Technologies (WOOT) 2015
- International Workshop on Emerging Cyberthreats and Countermeasures (ECTCM) 2013, 2014, 2015

External Reviewer

- Privacy Enhancing Technologies Symposium (PETS) 2017, 2018
- International Conference on emerging Networking EXperiments and Technologies (CoNEXT) 2016

Journal Reviewer

- ACM Transactions on Privacy and Security
- Computers & Security
- EURASIP Journal on Information Security
- IEEE Transactions on Computers
- IEEE Transactions on Dependable and Secure Computing
- IEEE Transactions on Information Forensics and Security
- International Journal of Information Security
- Journal of Computer Virology and Hacking Techniques
- Theoretical Computer Science

EXTRA-CURRICULAR ACTIVITIES

- Mentor for Learn IT Girl, a program that helps women around the globe to learn new programming languages (<https://www.learnitgirl.com>) since October 2017
- Organization of the lightning talk sessions at the Workshop for Women in Cyber Security (CyberW, co-located with ACM CCS) October 2017
- Lead development and maintenance of Andrubis (<http://anubis.isecclab.org>), a large-scale public dynamic analysis sandbox for Android applications June 2012 – April 2016
- Conception of a one-day workshop on mobile malware analysis techniques August 2015
- Co-Supervision of Bachelor's and Master's thesis of Lukas Weichselbaum with the title "Dynamic Behavior Monitoring of Android Malware" June 2015
- Supervision of Master's thesis of Matthias Neumayr with the title "The Current State of Browser Extension Security and Extension-based Malware" January 2015
- Conception of a four-day workshop on dynamic malware analysis techniques, analysis evasion and countermeasures August 2014
- Conception of a techNIKE workshop teaching Internet security topics and security and privacy awareness in online social networks to girls aged 10–14 June 2014
- Recruitment committee member for the position of full tenured professor of security at Vienna University of Technology April 2014
- Investigator for the Vienna University of Technology in the i-Code Real-time Malicious Code Detection Project (<http://www.icode-project.eu>) August 2011 – June 2012

- Member of the We_Own_YOu Capture The Flag team
 - Participation in the 2012 DEF CON Capture The Flag
 - 1st place in the 2011 UCSB International Capture The Flag (iCTF)

MEDIA COVERAGE (EXCERPT)

- Kurier: *Exzellente, jung, weiblich: Sie will das Web sicher machen* May 2017
- Der Standard: *Drammer: Neuer Hardwareangriff gefährdet Android-Smartphones* October 2016
- Der Spiegel: *Forscher knacken Android-Smartphones* October 2016
- Neue Zürcher Zeitung: *Android für Rowhammer und Dirty Cow anfällig* October 2016
- WIRED: *Elegant Physics (and Some Down and Dirty Linux Tricks) Threaten Android Phones* October 2016
- Ars Technica: *Using Rowhammer bitflips to root Android phones is now a thing* October 2016
- Daily Mail: *The Rowhammer bug that can threaten millions of Android devices: Experts reveal 'bit flip' flaw that attacks memory chips* October 2016
- The Register: *App proves Rowhammer can be exploited to root Android phones – and there's little Google can do to fully kill it* October 2016
- The Inquirer: *Rowhammer: Memory chip flaw enables hackers to root Android devices* October 2016
- Boston Globe: *Harvard, Northeastern's privacy tools flag apps that leak personal data* November 2015
- NBC News: *ReCon App Watches Your Other Apps for Leaked Private Info* November 2015
- MSN News: *Hackers may hit home for the holidays* November 2015
- Christian Science Monitor: *Want to stop apps from sharing your data?* November 2015
- New Scientist: *Privacy apps to help fight back against companies that track you* November 2015
- SRF Kassensturz: *Werbeanrufe aufs Handy: Liefern Apps Callcentern unbemerkt Daten?* April 2015
- Futurezone: *TU-Wien-App zeigt Gefahren unter Android auf* October 2014
- ORF Newton: *Cyberkriminalität* (TV segment on Andrubis) March 2013
- Oberösterreichische Nachrichten: *Eine Linzerin im Team der weltbesten Hacker* December 2011