

Martina Lindorfer

📍 Technische Universität Wien (TU Wien)
Institute of Logic and Computation (192/6)
Security and Privacy Group
Favoritenstrasse 9-11, Stiege 2, 1. Stock
A-1040 Wien
✉ mlindorfer@iseclab.org
🌐 <https://martina.lindorfer.in>
🐦 @lindorferin

EDUCATION

Doctor of Technical Sciences (Dr. techn.) July 2011 – November 2015
TU Wien, Austria
Graduated with honors of the Austrian president (Promotio Sub Auspiciis Praesidentis)
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
TU Wien, Austria
Major: Software Engineering & 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

RESEARCH EXPERIENCE

Key Researcher since July 2019
SBA Research, Vienna, Austria

Assistant Professor (Tenure Track) since October 2018
Head of the Secure Systems Lab (Seclab)
Security and Privacy Group, TU Wien, Vienna, Austria

Postdoctoral Researcher April 2016 – June 2018
Computer Security Group, University of California, Santa Barbara, USA

Research Scientist January 2013 – December 2015
SBA Research, Vienna, Austria

Visiting Researcher October 2014 – March 2015
Systems Security Lab, Northeastern University, Boston, USA
• Data leak detection in mobile app traffic (ReCon)

Research Assistant July 2011 – September 2014
Secure Systems Lab, TU Wien, Vienna, Austria
• Dynamic malware analysis and detection of Android malware (Andrubis)

Research Intern November 2013
Foundation for Research and Technology – Hellas (FORTH-ICS), Heraklion, Greece
• Discovery and detection of malicious Android apps in alternative markets (AndRadar)

Research Intern

January – May 2013

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

- Botnet traffic detection 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

Research 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

March – June 2008

Distributed Systems Technologies, TU Wien, Vienna, Austria

Software Engineer (Professional Practical Training)

March – June 2006

Utimaco Safeware AG, Linz, Austria

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

PUBLICATIONS

Conferences

MineSweeper: An In-depth Look into Drive-by Cryptocurrency Mining and Its Defense

Radhesh Krishnan Konoth, Emanuele Vineti, Veelasha Moonsamy, [Martina Lindorfer](#), Christopher Kruegel, Herbert Bos, Giovanni Vigna

ACM Conference on Computer and Communications Security (CCS), October 2018

Panoptispy: Characterizing Audio and Video Exfiltration from Android Applications

Elleen Pan, Jingjing Ren, [Martina Lindorfer](#), Christo Wilson, David Choffnes

Privacy Enhancing Technologies Symposium (PETS), June 2018

GuardION: Practical Mitigation of DMA-based Rowhammer Attacks on ARM

Victor van der Veen, [Martina Lindorfer](#), Yanick Fratantonio, Harikrishnan Padmanabha Pillai, Giovanni Vigna, Christopher Kruegel, Herbert Bos, Kaveh Razavi

Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA), June 2018

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), February 2018

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), February 2017

Drammer: Deterministic Rowhammer Attacks on Mobile Platforms

Victor van der Veen, Yanick Fratantonio, [Martina Lindorfer](#), Daniel Gruss, Clémentine Maurice, Giovanni Vigna, Herbert Bos, Kaveh Razavi, Cristiano Giuffrida

ACM Conference on Computer and Communications Security (CCS), 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), 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), 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), 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), 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), 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), December 2012

Detecting Environment-Sensitive Malware

Martina Lindorfer, Clemens Kolbitsch, Paolo Milani Comparetti
International Symposium on Recent Advances in Intrusion Detection (RAID), 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),
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 (SFCS), 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), 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), 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, TU Wien, 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), November 2013

The Red Book: A Roadmap for Systems Security Research

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

HONORS & AWARDS

- Cor Baayen Young Researcher Award from the European Research Consortium for Informatics and Mathematics (ERCIM) October 2018
- Pwnie nomination for Best Privilege Escalation Bug for Rampage August 2018
- Best Research Award at the Int. Conference on Computing Systems (CompSys) for GuardION June 2018
- Scholarship of Excellence from the Austrian Federal Ministry of Science, Research and Economy December 2017
- Best Paper Award at the CSAW Applied Research Competition for Drammer November 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
- Bug bounty from the Android Security Rewards Program for Drammer (CVE-2016-6728, marked as critical) November 2016
- Marshall Plan scholarship for a research exchange with Northeastern University May 2014
- Research fellowship from Clear Sky Ventures for excellence in innovation January 2014
- SysSec scholarship for a research exchange with FORTH-ICS October 2013
- Google EMEA Anita Borg Memorial Scholarship (now Women Techmakers 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

ACADEMIC SERVICE

Community Service

- Organization of the 1st International Summer School on Security & Privacy for Blockchains and Distributed Ledger Technologies at TU Wien together with SBA Research and Princeton University September 2019
- Guest editor of the special issue on Security on Mobile and IoT Devices for IET Information Security May 2019
- Reviewer for the Anita Borg Systems Pass It On Awards for “women in computing or projects that inspire and support girls and women to enter computing” February 2018
- Organization of the lightning talk sessions at the Workshop for Women in Cyber Security (CyberW, co-located with ACM CCS) October 2017
- Recruitment committee member for the position of full tenured professor of security at TU Wien April 2014

Program Committee Member

- The Web Conference (formerly known as WWW, Security, Privacy, and Trust track) 2020
- IEEE Symposium on Security and Privacy (S&P) 2020
- USENIX Security Symposium (USENIX Security) 2019, 2020
- Annual Computer Security Applications Conference (ACSAC), incl. Artifact Evaluations Subcommittee 2019
- ACM ASIA Conference on Computer and Communications Security (ASIACCS) 2019
- Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA) 2016, 2017, 2018, 2019
- European Workshop on Systems Security (EuroSec) 2018, 2019
- USENIX Workshop on Offensive Technologies (WOOT) 2015, 2018
- International Symposium on Engineering Secure Software and Systems (ESSoS) 2018
- European Workshop on Systems Security (EuroSec) 2018
- International Workshop on Innovations in Mobile Privacy and Security (IMPS) 2017, 2018
- Workshop on Formal Methods for Security Engineering (ForSE) 2017, 2018
- International Workshop on Emerging Cyberthreats and Countermeasures (ECTCM) 2013, 2014, 2015

External Reviewer

- IEEE European Symposium on Security and Privacy (EuroS&P) 2019
- 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

- IEEE Transactions on Mobile Computing
- International Journal of Information Security
- Journal of Computer Virology and Hacking Techniques
- Theoretical Computer Science

OTHER ACTIVITIES

- Panelist on “Cyber-Security + Education” at the DigitalDays organized by DigitalCity.Wien November 2019
- Keynote speaker at the European Cyber Security Challenge (ESCS) October 2019
- Mentor for female students at TU Wien to support them with career planning after graduation since June 2019
- Mentor for Learn IT Girl, a program that helps women around the globe to learn new programming languages October – December 2017
- Lead development and maintenance of Andrubis, 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
- 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
- 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)

Personal Profiles

- Kurier: *Exzellente, jung, weiblich: Sie will das Web sicher machen* May 2017
- Oberösterreichische Nachrichten: *Eine Linzerin im Team der weltbesten Hacker* December 2011

Rowhammer Attacks & Defense

- Ars Technica: *New RAMpage exploit revives Rowhammer attack to root Android devices* July 2018
- Heise: *Rampage: Neuer Rowhammer-Angriff betrifft alle Android-Handys seit 2011* June 2018
- 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

Privacy Leak Detection

- New York Times (The Privacy Project): *No, Facebook Is Not Secretly Listening to You (Except when it is.)* August 2019
- ABC ScreenTime w/ Diane Sawyer: *Are your devices listening?* (TV segment on Panoptispy) May 2019
- New York Times (Op-Ed): *How Silicon Valley Puts the 'Con' in Consent* February 2019
- Futurezone: *Android-Apps verschicken unbemerkt Screenshots* July 2018
- Heise: *Forscher: Android-Apps schicken Screenshots und Videos an Drittfirmer* July 2018
- Fortune: *Your Android Apps Are (Probably) Not Snooping on You, a New Study Says* July 2018
- Engadget: *Research shows Facebook (probably) isn't listening through your phone* July 2018

- The Verge: *Your phone isn't listening to you, researchers say, but it may be watching everything you do* July 2018
- Gizmodo: *These Academics Spent the Last Year Testing Whether Your Phone Is Secretly Listening to You* July 2018
- 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

Malware Analysis

- 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