

# Martina Lindorfer

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📍 Technische Universität Wien (TU Wien)  
Institute of Logic and Computation (192/6)  
Research Unit Security and Privacy  
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## 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

## PROFESSIONAL EXPERIENCE

**Key Researcher** since July 2019

SBA Research, Vienna, Austria

**Assistant Professor (Tenure Track), Head of the Secure Systems Lab (Seclab)** since October 2018

Research Unit Security and Privacy, 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

**Research Assistant** July 2011 – September 2014

Secure Systems Lab, TU Wien, Vienna, Austria

**Research Intern** November 2013

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

**Research Intern** January – May 2013

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

**Research Intern** September – November 2009

Multimedia Security Lab, Korea University, Seoul, South Korea

## PUBLICATIONS

### Conferences

*FlowPrint: Unsupervised Mobile-App Fingerprinting on Encrypted Network Traffic*

Thijs van Ede, Riccardo Bortolameotti, Andrea Continella, Jingjing Ren, Daniel Dubois, [Martina Lindorfer](#),  
David Choffnes, Maarten van Steen, Andreas Peter  
Network and Distributed System Security Symposium (NDSS), February 2020

*When Malware is Packin' Heat: Limits of Machine Learning Classifiers Based on Static Analysis Features*

Hojjat Aghakhani, Fabio Gritti, Francesco Mecca, [Martina Lindorfer](#), Stefano Ortolani, Davide Balzarotti,  
Giovanni Vigna, Christopher Kruegel  
Network and Distributed System Security Symposium (NDSS), February 2020

*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**

*TXting 101: Finding Security Issues in the Long Tail of DNS TXT Records*

Olivier van der Toorn, Roland van Rijswijk-Deij, Tobias Fiebig, Martina Lindorfer, Anna Sperotto  
International Workshop on Traffic Measurements for Cybersecurity (WTMC), September 2020  
co-located IEEE European Symposium on Security and Privacy (EuroS&P)

*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 Platzter  
International Workshop on Building Analysis Datasets and Gathering Experience Returns for Security (BADGERS),  
September 2014  
co-located with the European Symposium on Research in Computer Security (ESORICS)

*Skin Sheriff: A Machine Learning Solution for Detecting Explicit Images*

Christian Platzter, Martin Stuetz, Martina Lindorfer,  
International Workshop on Security and Forensics in Communication Systems (SFCS), June 2014  
co-located with the ACM Symposium on Information, Computer and Communications Security (ASIACCS)

*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  
co-located with the IEEE Symposium on Security and Privacy (S&P)

*A View to a Kill: WebView Exploitation*

Matthias Neugschwandtner, Martina Lindorfer, Christian Platzter  
USENIX Workshop on Large-Scale Exploits and Emergent Threats (LEET), August 2013  
co-located with the USENIX Security Symposium

**Miscellaneous**

*Andrubis: Android Malware Under the Magnifying Glass*

Lukas Weichselbaum, Matthias Neugschwandtner, Martina Lindorfer, Yanick Fratantonio,  
Victor van der Veen, Christian Platzter  
Technical Report, TU Wien, July 2014

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

Martina Lindorfer, Matthias Neumayr, Juan Caballero, Christian Platzter  
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**

- Inaugural Early Career Award for Women in Cybersecurity Research (CyberW) March 2020
- Hedy Lamarr Award from the City of Vienna for “special achievements in the field of modern information technologies” November 2019
- 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 Federal Ministry of Science, Research and Economy (BMBWF) 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 November 2016  
(CVE-2016-6728, marked as critical)
- 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

## FUNDING

### SecInt: Doctoral College for Secure and Intelligent Human-Centric Digital Technologies

PIs: Matteo Maffei, Tanja Zseby, Ezio Bartocci, Efstathia Bura, Thomas Gärtner, Laura Kovacs, Andreas Kugi, Martina Lindorfer, Matteo Maffei, Semeen Rehman, Georg Weissenbacher (TU Wien)  
 Project Volume: 10 PhD positions (4 years starting Fall 2020)  
 Funded by TU Wien

### IoTIO: Analyzing and Understanding the Internet of Insecure Things

PI: Martina Lindorfer (TU Wien), Co-PI: Kevin Borgolte (Princeton University)  
 Project Volume: EUR 783,940 (80% for TU Wien, 4 years starting June 2020)  
 Funded by the Vienna Science and Technology Fund (WWTF) as part of the ICT Call 2019

## INVITED TALKS, PANELS & PROFESSIONAL MEETINGS

- Digitaler Salon “How we can guarantee security and privacy in the future” hosted by DigitalCity.Wien July 2020
- Keynote speaker at CyberW “Large-scale Mobile App Analysis for the Detection of Malware and Privacy Leaks (...plus some lessons learned as a reluctant academic researcher)” March 2020
- Frauendomäne workshop “Reclaiming Expertise” on the visibility of female experts in CS February 2020
- “Tagebuch der Informatikerin” workshops at schools in Vienna with girls aged 13–15 January 2020
- “Tagebuch der Informatikerin oder: Wie begeistert man Mädchen für Technik & Informatik?” keynote and panelist on closing the gender gap in computer science January 2020
- Participation in a Lorentz Center workshop on “AI+Sec: Artificial Intelligence and Security” December 2019
- “Digitale Transformation - aber sicher!” science talk and panelist at the Mercur Innovation Awards by the Austrian Economic Chambers (WKO) November 2019
- “Cyber-Security + Education” panelist at the DigitalDays organized by DigitalCity.Wien November 2019
- Keynote speaker at the European Cyber Security Challenge (ESCS) October 2019
- “Securing Mobile Devices & Protecting the Privacy of Users” at the ERCIM fall meeting October 2018
- “From Zero-bug Exploitation to Mines of Money” (with Victor van der Veen, VU Amsterdam) at the One Conference on Dutch-American collaborations in security research October 2018

## ACADEMIC SERVICE

### Community Service

- Elected member of the Faculty Council of the Faculty of Informatics at TU Wien 2020 – 2023

- Jury member for the Dutch Cyber Security Research Papper (DCSRP) award February 2020
- 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
- Recruitment committee member for the position of full tenured professor of security at TU Wien April 2014

### Program Committee Member

- IEEE Symposium on Security and Privacy (S&P) 2020, 2021
- The Web Conference (formerly known as WWW, Security, Privacy, and Trust track) 2020, 2021
- ACM Conference on Computer and Communications Security (CCS) 2020
- USENIX Security Symposium (USENIX Security) 2019, 2020
- Conference on Detection of Intrusions and Malware & Vulnerability Assessment (DIMVA) 2016–2020
- European Workshop on Systems Security (EuroSec) 2018, 2019, 2020
- Reversing and Offensive-oriented Trends Symposium (ROOTS) 2020
- Annual Computer Security Applications Conference (ACSAC), incl. Artifact Evaluations Committee 2019
- ACM ASIA Conference on Computer and Communications Security (ASIACCS) 2019
- USENIX Workshop on Offensive Technologies (WOOT) 2015, 2018
- International Symposium on Engineering Secure Software and Systems (ESSoS) 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

- Privacy Enhancing Technologies Symposium (PETS) 2017, 2018, 2020
- IEEE European Symposium on Security and Privacy (EuroS&P) 2019
- International Conference on emerging Networking EXperiments and Technologies (CoNEXT) 2016

### Guest Editor

- ACM Digital Threats Research and Practice: Special Issue on Deployable & Impactful Security Applications 2020
- IET Information Security: Special Issue on Security on Mobile & IoT Devices 2019

### Journal Reviewer (excerpt)

- ACM Transactions on Privacy and 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

## TEACHING ACTIVITIES

- Redesign of security teaching in the Bachelor and Master program at TU Wien February 2020
- **Introduction to Security** (TU Wien, 350 Bachelor students) Summer 2019, 2020  
Introductory overview of system, web, and network security with lab exercises  
Organization and principal instructor
- **Seminar on System Security** (TU Wien, 15 Master students) Winter 2019  
Bi-weekly presentation and discussion of latest research papers from top-tier security venues  
Organization and principal instructor
- **Advanced Internet Security** (TU Wien, 50 Master students) Winter 2019  
Advanced course on system and application security in collaboration with SBA Research  
Contribution of lectures on mobile security and hardware/software co-attacks

## OTHER ACTIVITIES

- Organization of Hackathon 4 Good AI and (virtual) Speedmentoring during the EU Code Week October 2020
- Mentor for female students at TU Wien to support them with career planning after graduation since 2019
- Organization of the 1st International Summer School on Security & Privacy for Blockchains and Distributed Ledger Technologies at TU Wien (with SBA Research and Princeton University) September 2019
- Organization of the lightning talk sessions at the Workshop for Women in Cyber Security (CyberW, co-located with ACM CCS) October 2017
- Mentor for Learn IT Girl, an international program teaching women to programming languages Fall 2017
- Lead development and maintenance of Andrubis, a public analysis sandbox for Android apps 2012 – 2016
- Conception of the workshop “Sicherheit im Internet: Facebook, WhatsApp, Instagram & Co.” June 2014  
teaching security and privacy awareness to girls aged 10–14 as part of the techNIKE initiative
- Member of the We\_own\_YOu Capture The Flag team and participation in the 2012 DEF CON CTF

## MEDIA COVERAGE (EXCERPT)

### Personal Profiles & Interviews

- C/O Vienna Magazine: *Die Sicherheitsforscherin: Sicher nicht sicher* June 2020
- Die Zeit: *Big Data: Sie weiß, was schiefgehen kann* April 2020
- Welt der Frau: *Dem Angreifer mehrere Schritte voraus* February 2020
- Ö1: *Außer Kontrolle? Über die (Un-)Durchschaubarkeit digitaler Systeme* (radio segment) January 2020
- Die Presse: *Bewusst für die Uni entschieden* January 2020
- Ö1: *Matrix: Skipiste 4.0 - Wenn Skifahren digital wird* (radio segment) January 2020
- Der Standard: *Geistesblitz: Im Internet der unsicheren Dinge* December 2019
- Kleine Zeitung: *Startgespräch: Wie sicher sind unsere Smartphones?* (podcast) November 2019
- Ö1: *Wissen Aktuell: Cybersecurity, Tiefschlaf, Zeitgeschichte* (radio segment) November 2019
- Futurezone: *Hedy-Lamarr-Preis geht an Martina Lindorfer* November 2019
- Wiener Zeitung: *Hedy-Lamarr-Preis für die Informatikerin Martina Lindorfer* November 2019
- Die Presse: *Österreich hackt sich auf den dritten Platz* October 2019
- Ingrid Brodnig: *Übermacht im Netz* (interview for book chapter on mobile security and privacy) September 2019
- Kurier: *Exzellente, jung, weiblich: Sie will das Web sicher machen* May 2017
- Der Standard: *Doppelter Sub-auspiciis-Jahrgang an der TU Wien* 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 Drittfirmen* 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