Curriculum Vitae
David Marco Sommer
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Nationality: Switzerland and Italy

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Research Interests

Privacy
Anonymous Communication
Machine Learning
Applied Statistics

Education and Qualification

2015 - present	PhD in the System Security Group at the Institute of Information Security at ETH Zürich.
2020	Visit of Princeton University, Princeton, USA Research Collaboration
2013 - 2015	Master of Science in Physics at ETH Zürich, specialized in computational and theoretical solid state physics. Master Thesis: *Competitive and Random Fragmentation of Trees*. Supervisors: Prof. Dr. H. Herrmann, Dr. J. Nagler. Semester Thesis: *Probability Density Function Estimation: Bayesian Approach.* Supervisor: Prof. Dr. D. Wuertz.
2010 - 2013	Bachelor of Science in Physics at ETH Zürich.
Spring 2010	Swiss Army: 21 weeks of mandatory service (Rekrutenschule) in Jassbach. While in service, I have worked for the Swiss army as developer in IT security and analysis, together with nonmilitary employees at the headquarter in Bern.

2006 – 2009	Swiss Matura (highschool diploma) at Gymnasium Münchenstein (Switzerland). Specialized in Mathematics and Physics. Additionally, I participated in the world championship with my Robotic Soccer Team (Robocup 2009 in Graz).
2002-2006	Progymnasium (intermediate gymnasium) in Arlesheim (Switzerland)
1995-2002	Kindergarten and Elementary in Dornach (Switzerland)

Employment

2015 – present	ETH Zürich (Switzerland)
2012 – 2013	Freelance Developer for armasuisse (Switzerland).
2010 – 2014	IT Administration for Dr. Med. C. Hollenstein (physician) in Laufen (Switzerland).

Scientific Publications

The respective main authors are marked with a star (*).

[1] David Sommer*, Liwei Song*, Sameer Wagh, Prateek Mittal.
Towards Probabilistic Verification of Machine Unlearning.
arXiv preprint

[2] David Sommer, Moritz Schneider, Jannik Gut, Srdjan Capkun.
Cyber-Risks in Paper Voting.
arXiv preprint

[3] David Sommer*, Sebastian Meiser, and Esfandiar Mohammadi.
Privacy Loss Classes: The Central Limit Theorem in Differential Privacy.
in Proceedings on Privacy Enhancing Technologies Issue 2 (PoPETS), 2019

[4] David Sommer*, Aritra Dhar*, Esfandiar Mohammadi, Srdjan Capkun, Daniel Ronzani
Deniable Upload and Download via Passive Participation.
in USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2019

[5] Elizabeth Stobert*, Elizabeta Cavar, Luka Malisa, and David Sommer.
Teaching Authentication in High Schools: Challenges and Lessons Learned.
USENIX Workshop on Advances in Security Education (ASE '17). USENIX Association, 2017

[6] Sinisa Matetic*, Mansoor Ahmed, Kari Kostiainen, Aritra Dhar, David Sommer, Arthur Gervais, Ari Juels, Srdjan Capkun

ROTE: Rollback Protection for Trusted Execution.
*2*6th USENIX Security Symposium, 2017

[7] Luka Malisa*, Kari Kostiainen, Thomas Knell, David Sommer, Srdjan Capkun
Hacking in the Blind: (Almost) Invisible Runtime User Interface Attacks.
Conference on Cryptographic Hardware and Embedded Systems (CHES), 2017

Talks

02/20	Princeton University, Princeton, USA *The Privacy Loss Distribution and its Privacy Loss Class: The Central Limit Theorem in Differential Privacy and Other Insights*
07/19	PETS ‘19, Stockholm, Sweden *Privacy Loss Classes: The Central Limit Theorem in Differential Privacy*
02/19	NSDI ‘19, Bosten, USA *Deniable Upload and Download via Passive Participation*
12/17	ZISC Lunch Seminar, Zürich, Switzerland *CoverUp: Privacy Through “Forced” Participation in Anonymous Communication Networks*

Scientific Service

2019	External reviewer for ACM CCS ‘19
2018	External reviewer for ACM CCS ‘18

Teaching

WS 2019	Informatik 1 (C++ Introduction) (TA)
SS 2019	Introduction to Machine Learning (TA)
WS 2018	Informatik für Mathematiker und Physiker (C++ Introduction) (TA)
SS 2018	Design of Digital Circuits (TA)
WS 2017	Informatik für Mathematiker und Physiker (C++ Introduction) (TA)
SS 2017	Design of Digital Circuits (TA)

WS 2016	Informatik für Mathematiker und Physiker (C++ Introduction) (TA)
SS 2016	Design of Digital Circuits (TA)

Supervised Theses

01/19 – present	Bachelor's Thesis, ETH Zürich, Zürich Sheila Zingg, *Numerically Approximating Optimal Noise in Differential Privacy.*
11/18 – present	Master's Thesis, ETH Zürich, Zürich Vincent Stettler, *Privacy-Preserving Data-Synthesis*.
09/18 – 03/19	Bachelor's Thesis, ETH Zürich, Zürich Jannik Gut, *Transferring Voting Results from Municipalities to the State Level.*
10/17 – 04/18	Bachelor's Thesis, ETH Zürich, Zürich Daniel Fischmann, *Comparison and Feasibility Evaluation of an Information-Theoretic Lower Privacy Bound.*
10/17 – 04/18	Master's Thesis, ETH Zürich, Zürich Luca Ardüser, *Fair Testing and Exchange of Machine Learning Models Between Distrusting Parties.*
12/16 – 06/17	Master's Thesis, ETH Zürich, Zürich Alexander Meier, *A Framework for Intention Hiding Proxy Service based on Forced Participation.*
03/16 – 09/16	Bachelor's Thesis, ETH Zürich, Zürich David Bimmler, *Exploring Cellular Hand-off as an Approach to Mobile Positioning.*

Awards

11/2019	Finalist CSAW'19 HackML a top-level competition held by *NYU Center for Cybersecurity (CCS)*
03/2017	Top 5 Finalist Spark Award by ETH Zürich *an award for the most promising invention which was registered for a patent in 2016*

Additional Interests and Skills

Information Technologies:
I am proficient in programming in C, C++, Python and moderately in Java. My interests lead me covering several fields of information technologies. Starting with microprocessor programming, expanding to several operating system including different Windows, Linux, OS/X and FreeBSD, I have a wide understanding of the interplay between hardware and software. I am especially interested in Linux and have collected significant knowledge about its ecosystem and the Linux-kernel itself. Currently, I have caught interest in Machine Learning and its huge potential towards automating our everyday life. In the past, I worked in Malware detection and deobfuscation as well, mainly for amd64 processors.

Amateur Radio:
I have passed the international amateur radio exam in accordance to the International Telecommunication Union (ITU) that allows to operate a licensed amateur radio station world-wide.

Languages:
I am fluent in German, Swiss-German and English, written and spoken. Additionally, basic knowledge in French and Spanish in writing and speaking.