

Florian Tramèr

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EDUCATION

- Sep. 2016 - Today **PhD in Computer Science** - STANFORD UNIVERSITY, Stanford CA, USA
Advised by Prof. Dan Boneh
- Sep. 2013 - Aug. 2015 **Master in Computer Science** - EPFL, Lausanne, Switzerland
Thesis: “Algorithmic Fairness Revisited”, supervised by Prof. Jean-Pierre Hubaux
Specialization in *Internet Computing*
GPA: 5.9/6.0
- Sep. 2009 - Aug. 2012 **Bachelor in Computer Science** - EPFL, Lausanne, Switzerland
Exchange year (2011-2012) - CARNEGIE MELLON UNIVERSITY, Pittsburgh PA, USA
GPA: 5.8/6.0

PROFESSIONAL EXPERIENCE

- Jun. 2017 - Sep. 2017 **IBM RESEARCH** - *Research Intern*, Yorktown Heights, NY, USA
Supervised by Dr. Evelyn Duesterwald
- Study of *adversarial examples* for speech recognition systems.
- Sep. 2015 - Aug. 2016 **EPFL** - *Scientific Assistant*, Lausanne, Switzerland
- Study of *extraction attacks* on Machine-Learning-as-a-Service platforms [TZJ+16].
 - Formal analysis of *trusted execution environments* [PST17], in particular for *transparent enclaves*, a model of trusted hardware with arbitrary side-channel leakage [TZL+17].
 - Design of formal methodologies and a tool, *FairTest*, for the discovery of “discrimination bugs” in data-driven algorithms [TAG+17].
 - Research on privacy-preserving ride-hailing [PDJ+17] and genomic studies [THH+15].
- Supervised by Prof. J-P. Hubaux, Laboratory for Communications and Applications.
- Sep. 2013 - Feb. 2015 **EPFL** - *Research Assistant*, Lausanne, Switzerland
Implementation and complexity analysis of algorithms for solving hard learning problems such as Learning Parity with Noise [BTV16], Learning with Errors and Learning with Rounding [DTV15].
Supervised by Prof. S. Vaudenay, Laboratory for Cryptography and Security.
- Mar. 2013 - Aug. 2013 **ELCA** - *Security Intern*, Lausanne, Switzerland
Design, proof of concept and implementation of a proxy web-application integrating the Elcard strong-authentication mechanism with the SAML 2.0 standard. Acquired experience with federated identity solutions, strong authentication methods, J2EE web development and software testing (unit, integration, regression). The new functionality is to be added to the next Elcard release.

PROFESSIONAL SERVICE

Program committee.

- Machine Learning and Computer Security Workshop (co-located with NIPS), 2017

Peer reviewer.

- Neural Information Processing Systems (NIPS), 2018
- International Conference on Machine Learning (ICML), 2018
- Financial Cryptography and Data Security (FC), 2018
- IEEE Symposium on Security & Privacy (IEEE S&P), 2017
- Privacy Enhancing Technologies Symposium (PETS), 2016

AWARDS AND SCHOLARSHIPS

2018		DOC.MOBILITY FELLOWSHIP (SWISS NATIONAL SCIENCE FOUNDATION)
2016		ZDENEK AND MICHAELA BAKALA FOUNDATION FELLOWSHIP
2015		EPFL MASTER AWARD (Highest GPA for complete Master studies at EPFL) SIA VAUDOISE AWARD (Highest GPA in Engineering) ELCA AWARD (Highest GPA in Computer Science)
2013-2015		EPFL EXCELLENCE FELLOWSHIP (Awarded for outstanding academic records)
2013-2015		EPFL RESEARCH SCHOLARS MSc Program
2012		EPFL BACHELOR PRIZE (Highest GPA for complete Bachelor studies: 3 rd place)
2012		CMU COMPUTER SCIENCE DEAN'S LIST (GPA: 4.0/4.0)

LANGUAGES

French	Native language
English	Fluent - CEFR level C2, Certificate in Advanced English - ESOL (2009)
German	Fluent - CEFR level C2

TECHNICAL SKILLS

Programming	Java, Scala, C, Python Matlab, x86 Assembly, J2EE, Web Development	very good skills good skills
Machine Learning	TensorFlow, Theano, Keras, Scikit-Learn	
Systems	Unix, Windows, OS X environments Tomcat, Apache Httpd, Adfs 2.0, SQL, Hadoop, HBase, Svn, Git	

Journal Articles

- [RTJ+17] J. L. Raisaro, F. Tramèr, Z. Ji, D. Bu, Y. Zhao, K. Carey, et al. “Addressing Beacon Re-Identification Attacks: Quantification and Mitigation of Privacy Risks”. *Journal of the American Medical Informatics Association (JAMIA)* (Feb. 2017).
- [BTV16] S. Bogos, F. Tramèr, and S. Vaudenay. “On Solving LPN using BKW and Variants”. *Cryptography and Communications* 8.3 (July 2016), pp. 331–369.

Conference Proceedings

- [BDT+18] L. Breidenbach, P. Daian, F. Tramèr, and A. Juels. “Enter the Hydra: Towards Principled Bug Bounties and Exploit-Resistant Smart Contracts”. In *USENIX Security Symposium*. <http://eprint.iacr.org/2017/1090>. Aug. 2018.
- [TKP+18] F. Tramèr, A. Kurakin, N. Papernot, I. Goodfellow, D. Boneh, and P. McDaniel. “Ensemble Adversarial Training: Attacks and Defenses”. In *International Conference on Learning Representations (ICLR)*. <https://arxiv.org/abs/1705.07204>. Apr. 2018.
- [PDJ+17] A. Pham, I. Dacosta, B. Jacot-Guillarmod, K. Huguenin, T. Hajar, F. Tramèr, and J.-P. Hubaux. “PrivateRide: A Privacy-Preserving and Secure Ride-Hailing Service”. In *Privacy Enhancing Technologies Symposium (PETS)*. July 2017.
- [PST17] R. Pass, E. Shi, and F. Tramèr. “Formal Abstractions for Attested Execution Secure Processors”. In *EUROCRYPT*. Apr. 2017.
- [TAG+17] F. Tramèr, V. Atlidakis, R. Geambasu, D. Hsu, J.-P. Hubaux, M. Humbert, A. Juels, and H. Lin. “FairTest: Discovering Unwarranted Associations in Data-Driven Applications”. In *IEEE European Symposium on Security and Privacy (EuroS&P)*. IEEE. Apr. 2017.
- [TZL+17] F. Tramèr, F. Zhang, H. Lin, J.-P. Hubaux, A. Juels, and E. Shi. “Sealed-Glass Proofs: Using Transparent Enclaves to Prove and Sell Knowledge”. In *IEEE European Symposium on Security and Privacy (EuroS&P)*. IEEE. Apr. 2017.
- [TZJ+16] F. Tramèr, F. Zhang, A. Juels, M. Reiter, and T. Ristenpart. “Stealing Machine Learning Models via Prediction APIs”. In *USENIX Security Symposium*. Aug. 2016.
- [THH+15] F. Tramèr, Z. Huang, J.-P. Hubaux, and E. Ayday. “Differential Privacy with Bounded Priors: Reconciling Utility and Privacy in Genome-Wide Association Studies”. In *ACM Conference on Computer and Communications Security (ACM CCS)*. ACM. Oct. 2015, pp. 1286–1297.
- [DTV15] A. Duc, F. Tramèr, and S. Vaudenay. “Better Algorithms for LWE and LWR”. In *EUROCRYPT*. Springer, Apr. 2015, pp. 173–202.

Workshops

- [EEF+18] K. Eykholt, I. Evtimov, E. Fernandes, B. Li, D. Song, T. Kohno, A. Rahmati, A. Prakash, and F. Tramèr. “Physical Adversarial Examples for Object Detectors”. In *USENIX Workshop on Offensive Technologies (WOOT)*. <https://arxiv.org/abs/1712.08062>. 2018.

Manuscripts

- [TB18] F. Tramèr and D. Boneh. *Slalom: Fast, Verifiable and Private Execution of Neural Networks in Trusted Hardware*. arXiv preprint arXiv:1806.03287. <https://arxiv.org/abs/1806.03287>. June 2018.
- [TPG+17] F. Tramèr, N. Papernot, I. Goodfellow, D. Boneh, and P. McDaniel. *The Space of Transferable Adversarial Examples*. arXiv preprint arXiv:1704.03453. <https://arxiv.org/abs/1704.03453>. Apr. 2017.