



Marc Juarez

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RESEARCH INTERESTS

Privacy and anonymity; traffic analysis; web security and tracking; adversarial machine learning

EDUCATION

KU Leuven, Leuven, Belgium

- Ph.D. in Electrical Engineering Oct 2013 – Expected: Dec 2018
 - Thesis: “Design and Evaluation of Machine Learning Methods for Traffic Analysis”
 - Adviser: Prof. Claudia Diaz
 - Focus: Privacy, traffic analysis, anonymous communications, machine learning

Autonomous University of Barcelona (UAB), Bellaterra, Spain

- Double Degree in Mathematics (BSc) and Computer Engineering (MSc) Sep 2007 – Jun 2013
 - Thesis: “DisPA, an Intelligent Agent for Private Web Search”
 - Advisers: Prof. Vicenç Torra and Prof. Guillermo Navarro

SELECTED PUBLICATIONS

CONFERENCES

- [C8] R. Jansen, M. Juarez^{*}, R. Galvez, T. Elahi, and C. Diaz, “Applying Traffic Fingerprinting to Measure Tor,” to appear in the *Proceedings of the Network and Distributed System Security Symposium (NDSS)*, pp. 15, IEEE Computer Society, Sand Diego, CA, USA, Feb 2018.
- [C7] V. Rimmer, D. Preuveneers, M. Juarez, T. Van Goethem, and W. Joosen, “Automated Website Fingerprinting through Deep Learning,” to appear in the *Proceedings of the Network and Distributed System Security Symposium (NDSS)*, pp. 15, IEEE Computer Society, Sand Diego, CA, USA, Feb 2018.
- [C6] R. Overdorf, M. Juarez, G. Acar, R. Greenstadt, and C. Diaz, “How Unique is Your .onion? An Analysis of the Fingerprintability of Tor Onion Services,” to appear in the *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, pp. 16, ACM, Dallas, TX, USA, Nov 2017. **(best paper award finalist)**
- [C5] G. Cherubin, J. Hayes, and M. Juarez^{*}, “Website Fingerprinting Defenses at the Application Layer,” in the *Proceedings of the Privacy Enhancing Technologies Symposium (PoPETS)*, pp. 187–204, De Gruyter, Minneapolis, MN, USA, Jul 2017.
- [C4] M. Juarez^{*}, M. Imani, M. Perry, C. Diaz, and M. Wright, “Toward an Efficient Website Fingerprinting Defense,” in the *Proceedings of the European Symposium on Research in Computer Security (ESORICS)*, vol. 2, pp. 27–46, Springer, Heraklion, Crete, Greece, Nov 2016. **(outstanding paper award)**
- [C3] M. Juarez^{*}, S. Afroz, G. Acar, C. Diaz, and R. Greenstadt, “A Critical Analysis of Website Fingerprinting Attacks,” in the *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, pp. 263–274, ACM, Scottsdale, AZ, USA, Nov 2014.
- [C2] G. Acar, C. Eubank, S. Englehardt, M. Juarez, A. Narayanan, and C. Diaz, “The Web never forgets: Persistent tracking mechanisms in the wild,” in the *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, pp. 674–689, ACM, Scottsdale, AZ, USA, Nov 2014.
- [C1] G. Acar, M. Juarez, N. Nikiforakis, C. Diaz, S. Gürses, F. Piessens, and B. Preneel, “FPDetective: Dusting the Web for Fingerprinters,” in the *Proceedings of the ACM Conference on Computer and Communications Security (CCS)*, pp. 1129–1140, ACM, Berlin, Germany, Nov 2013. **(runner-up PET award)**

JOURNALS

- [J1] M. Juarez^{*} and V. Torra, “Toward a Privacy Agent for Information Retrieval,” *International Journal of Intelligent Systems*, ch. 28 (6), pp. 606–622, Wiley, Mar 2013.

^{*}First author.

AWARDS & SCHOLARSHIPS	<ul style="list-style-type: none"> ■ PhD fellowship 2015 – Present Four-year funding for fundamental research granted by the <i>National Fund for Scientific Research (FWO)</i>, Belgium. ■ Deep Learning and Security Workshop Award 2017 For the presentation in the Research Forum. ■ Finalist of best paper awards, ACM CCS 2017 For “How Unique is Your .onion? An Analysis of the Fingerprintability of Tor Onion Services”. Only 7% of the accepted papers and 1% of all submissions were selected. ■ Outstanding paper award, ESORICS 2016 For “Toward an Efficient Website Fingerprinting Defense”. ■ Runner up of the Award for Outstanding Research in Privacy Enhancing Technologies, PETS 2015 For “FPDetective: Dusting the Web for Fingerprinters”. ■ Erasmus scholarship to study abroad within the LLP Erasmus Exchange Feb 2013 – Jun 2013 Funding granted by the Commission of the European Communities. ■ Stipend for undergrad studies, Caixa Manresa 2007 Granted to top-ranked students in the PAU (University Entrance Examination) in Spain. ■ Full tuition for first-year of undergraduate studies. 2007 Granted by the Spanish government due to highest grade distinction in high school.
	<p>WORK EXPERIENCE</p> <p>KU Leuven, Leuven, Belgium</p> <ul style="list-style-type: none"> ■ Teaching Assistant / Research Assistant Jan 2013 – Present <ul style="list-style-type: none"> • Daily supervisor of master theses. • Assisting the courses “Privacy Enhancing Technologies” (B-KUL-H09L2A) and “Privacy and Big Data” (B-KUL-H00Y2A). <p>Google Summer of Code</p> <ul style="list-style-type: none"> ■ Summer Intern in the Tor Project May 2014 – Aug 2014 <ul style="list-style-type: none"> • Project: A Framework for Website Fingerprinting Countermeasures • Mentors: Mike Perry and Yawning Angel <p>Research Center on Artificial Intelligence (IIIA-CSIC), UAB, Bellaterra, Spain A research center belonging to the Spanish Council for Scientific Research.</p> <ul style="list-style-type: none"> ■ Software Engineer / Research Assistant Jan 2012 – Oct 2013 <ul style="list-style-type: none"> • Project: Advanced Research on Information Security and Privacy (ARES)
	<p>SERVICE</p> <p>PoPETS Publication Chair 2017 – Present</p> <p>Program Committee Member 2016 and 2017</p> <ul style="list-style-type: none"> • In the International Workshop on Data Privacy Management (DPM) • In the IEEE International Conference on Advanced and Trusted Computing (ATC) <p>External reviewer</p> <ul style="list-style-type: none"> • Conferences: PoPETS 2016, 2017 and 2018, ACM CCS 2014 and 2017, IEEE Security & Privacy 2016, Financial Cryptography 2015, SPACE 2015, USENIX Security Symposium 2014 • Journals: Transactions on Data Privacy, Elsevier Computers & Security • Books: “Advanced Research in Data Privacy” <p>Session Chair</p> <ul style="list-style-type: none"> • ‘Privacy’ in MDAI 2016 • ‘Privacy Protection’ in DPM 2016 • ‘Anonymous communications’ in HotPETS 2017
	<p>OTHER RESEARCH ACTIVITIES</p> <p>Research stay May 2017 – Aug 2017</p> <ul style="list-style-type: none"> • in the Center for Cybersecurity, RIT, Rochester, NY, USA • Supervisor: Prof. Matthew Wright <p>Research visit Nov 2013</p> <ul style="list-style-type: none"> • in the Privacy, Security, and Automation Laboratory, Drexel University, PA, USA • Supervisor: Prof. Rachel Greenstadt

INVITED TALKS Presentation at Research Forum the of Deep Learning and Security Workshop , NUS, Singapore, 2017
Invited lecture within a course on Privacy Enhancing Technologies, TU Wien, Vienna, Austria, 2017
Seminar at the Computer Communications and Applications Lab, EPFL, Lausanne, Switzerland, 2017
Seminar at the GCCIS, RIT, Rochester, NY, USA, 2017
Seminar at the CrySyS Lab, Budapest University of Technology, Budapest, Hungary, 2017
Talk in MDAI, Universitat d'Andorra, Sant Julià de Lòria, Andorra, 2016
Lecture in the Secure Application Development course (SecAppDev), Leuven, Belgium, 2016