



Célestin Matte

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29 years old

Education

- 2017** **PhD** in Computer Science, University of Lyon, INSA Lyon, France.
- 2014** **Master** (*Diplôme d'ingénieur*) at **Ensimag**, Grenoble INP. One semester in Aalto University (**Finland**). Major: Engineering of Information Systems.
- 2011** **DUT** in computer sciences in Metz, first in the class. One semester in **Germany**.

Professional experience

- 2020** Freelance engineer
- 2019 - 2020** Postdoctoral researcher at Inria Sophia Antipolis - Indes team: web tracking.
- 2018** Off year for personal projects¹
- 2014 - 2017** PhD student at CITI Lab - Inria Privatics: privacy-preserving Wi-Fi tracking.
- 2014** 6-month internship at CITI Lab (Inria, Lyon): privacy problems in Wi-Fi technology.
- 2013** 2-month internship at TDF: Solution for monitoring QoS of a network architecture.
- 2012** 2-month internship at Digigram: Installation and configuration of a bugtracking system (Redmine), defining of needs and import of existing datas.
- 2011** 6 months (internship + half-time job): Hochschule Mittweida, Germany. Creation of a reporting system and a data warehouse (Qlikview, Drupal).

Community Service

- Organization Committee: GreHack'15²
- Program Committee: APVP'19³, APVP'20⁴, WiSec'20⁵
- (Sub-)Reviewer: CoNext2015StudentWorkshop, TrustCom'16, EuroS&P'19, TheWeb'20, The Computer Journal, PETS'20, PETS'21, IEEE TWC⁶
- Member of the *Conseil de laboratoire*:
 - CITI lab, 2015-2016 (one year)
 - Inria Sophia, 2019-2020 (7 months)

Software

- Cookie-Glasses⁷ A browser extension showing consent registered by cookie banners of IAB Europe's Transparency & Consent Framework *JavaScript WebExtensions*
- Cookinspect⁸ Selenium-based crawler used to find violations in cookie banners of IAB Europe's Transparency & Consent Framework *Python Selenium WebExtensions SQLAlchemy*
- Wombat⁹ A Wi-Fi tracking system for testing and demonstrational purpose *Python Ansible Arch Linux*
- Panoptiphone¹⁰ A tool to show the identifying information that can be found in the frames broadcast by a Wi-Fi-enabled device *Python Wireshark*

Teaching

- INSA Lyon, Algorithmics and programming 1¹¹ EN, L1 (2016 - 2017) 64 hours, 1.5 groups with ~25 students per group Teaching of basis programming in Java, plus a Libreoffice introduction module.
- INSA Lyon, Algorithmique et programmation 1¹² FR, L1 (2014 - 2016) 2 * 64 hours, 1.5 groups with ~25 students per group

Talks

Invited talks:

- 01-2020: at Brave on cookie banners
- 09-2019: at CNIL on cookie banners

Workshops:

- APVP'19¹³: Do Cookie Banners Respect my Choice? Measuring Legal Compliance of Banners from IAB Europe's Transparency and Consent Framework
- APVP'17¹⁴: *Wombat: An experimental Wi-Fi tracking system*¹⁵
- CITI lab PhD Day'16¹⁶, APVP'16¹⁷: Why MAC Address Randomization is not Enough: An Analysis of Wi-Fi Network Discovery Mechanisms
- STDA'14¹⁸, APVP'14¹⁹: Device-to-Identity Linking Attack Using Targeted Wi-Fi Geolocation Spoofing

Dissemination

Installation of our *Wi-Fi tracking demonstration prototype*⁹:

- 2017 - 2018: *Cité des Sciences et de l'Industrie* (Paris) for the Terra Data exhibition²⁰.
- 2018: CITI laboratory showroom

- 2018: CNIL Linc showroom

Talks:

- Pas Sage en Seine'19: Traçage Wi-Fi et Bluetooth²¹

General press publications:

- Célestin Matte
*Traçage Wi-Fi : qu'en est-il en pratique ?*²²
GNU/Linux Magazine HS n°99 (2018-11)
- Célestin Matte
*MAC Address Randomization : tour d'horizon*²³
MISC n°96 (2018-03)
- Célestin Matte
*Transfert de style : et si Van Gogh peignait Tux ?*²⁴
GNU/Linux Magazine n°202 (2017-03) (cover article)
- Célestin Matte, Mathieu Cunche
*Traçage Wi-Fi, applications et contre-mesures*²⁵
GNU/Linux Magazine HS n°84 (2016-05)
- Célestin Matte
*Fingerprinting de smartphones : votre téléphone est-il traçable ?*²⁶
MISC n°81 (2015-09)

Industry impact

Google cites our work on MAC address randomization for related changes in Android²⁷.

Our work on MAC address randomization was discussed at an IEEE session²⁸.

A complaint by NOYB to the CNIL²⁹ followed our work on cookie banners. It was relayed by Le Monde³⁰, Le Figaro³¹, Les Échos³², Europe1³³, BFM TV³⁴...

Misc.

Languages: French (native), English (excellent), German (average).

Driving license.

PSC1: Prevention and civic aid, level 1 (French first aid diploma).

"Study-Arts³⁵" dance diploma from INSA Lyon.

Selected personal projects:

- System administrator for an association in 2012-14: in charge of servers hosting student websites (Summary³⁶)
sysadmin Debian
- Developer and administrator for the online game Sisteearth³⁷ *PHP MySQL Javascript sysadmin*
- Wrote several dancing shows, some using digital art (Kinect sensors) (Website¹) *C C++ libfreenect OpenCL SDL*
- panu³⁸ A XMPP (Jabber) bot *Python XMPP Slixmpp SQLAlchemy*
- html-cv-generator³⁹ A CV generator *Python Flask*

Publications

Conference publications:

- Célestin Matte, Cristiana Santos, Nataliia Bielova
*Purposes in IAB Europe's TCF: which legal basis and how are they used by advertisers?*⁴⁰
Summary⁴¹
APF 20⁴² (Annual Privacy Forum)
- Célestin Matte, Nataliia Bielova, Cristiana Santos
*Do Cookie Banners Respect my Choice? Measuring Legal Compliance of Banners from IAB Europe's Transparency and Consent Framework*⁴³
Website⁴⁴, Browser extension⁷
IEEE S&P'20⁴⁵ (IEEE Symposium on Security and Privacy, A*)
Press: *Techdir*⁴⁶ *Next INpact*⁴⁷ *Mediapart*⁴⁸ *Le Monde*³⁰ *CNIL's blog*⁴⁹
- Célestin Matte, Mathieu Cunche, *et al.*
*Defeating MAC Address Randomization Through Timing Attacks*⁵⁰
WiSec'16⁵¹ (ACM Conference on Security and Privacy in Wireless and Mobile Networks)
- Célestin Matte, Mathieu Cunche
*DEMO: Panoptiphone: How Unique is Your Wi-Fi Device?*⁵²
WiSec'16⁵¹ (ACM Conference on Security and Privacy in Wireless and Mobile Networks)
- Mathy Vanhoef, Célestin Matte, Mathieu Cunche, *et al.*
*Why MAC Address Randomization is not Enough: An Analysis of Wi-Fi Network Discovery Mechanisms*⁵³
AsiaCCS'16⁵⁴ (ACM ASIA Conference on Computer and Communications Security, B)
- Célestin Matte, Jagdish Prasad Achara, Mathieu Cunche
*Device-to-Identity Linking Attack Using Targeted Wi-Fi Geolocation Spoofing*⁵⁵
WiSec'15⁵⁶ (ACM Conference on Security and Privacy in Wireless and Mobile Networks) (+ travel grant obtained)

Journals:

- Cristiana Santos, Nataliia Bielova, Célestin Matte
*Are cookie banners indeed compliant with the law? Deciphering EU legal requirements on consent and technical means to verify compliance of cookie banners*⁵⁷
TechReg⁵⁸ (Technology and Regulation) (2020)

Tech report:

- Célestin Matte, Mathieu Cunche, Vincent Toubiana
*Does disabling Wi-Fi prevent my Android phone from sending Wi-Fi frames?*⁵⁹ (2017)

Thesis:

- [Wi-Fi Tracking: Fingerprinting Attacks and Countermeasures](#)⁶⁸ (2017)

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