

# Nataliia Bielova

May 7, 2024

I am a tenured Research Scientist (CRCN, equivalent to tenured Associate Professor) in computer science at Inria. My research area is Online Privacy, where I currently take an transdisciplinary approach combining computer science knowledge and collaborating with scholars in law and design. My interests include:

- Legal GDPR and ePrivacy requirements for online tracking
- Web privacy large-scale measurements
- Analysing dark patterns and manipulation of users and Web developers
- Identifying legal responsibilities of actors in the Web ecosystem
- Informing policy makers of gaps between law and technology

Contact information:

Email: [nataliia.bielova@inria.fr](mailto:nataliia.bielova@inria.fr)

Web site: <http://www-sop.inria.fr/members/Nataliia.Bielova/>

## 1 Education

- 2021 **Habilitation à diriger des recherches (HDR)**, University Cote d'Azur, France  
HDR thesis: "Protecting Privacy of Web Users"
- 2011 **PhD** in Computer Science, University of Trento, Italy
- 2007 **M.Sc. with honors** in Computer Science, Dnipro National University, Ukraine

## 2 Employment

- 2021 - 2022 Senior Privacy Fellow, LINC lab, French Data Protection Authority (CNIL)
- 2020 - ongoing Chargée de Recherche (CRCN), PRIVATICS team at Inria Grenoble Rhône-Alpes, administrative residence at Inria Sophia Antipolis – Méditerranée.
- 2018 - 2020, Visiting Professor, University of Trento, Italy
- 2013 - 2019 Chargée de Recherche (CRCN), Inria Sophia Antipolis – Méditerranée
- 2012 - 2013 Post-doc, Inria Rennes Bretagne Atlantique
- 2010 Visiting scholar, Katholieke Universiteit Leuven, Belgium
- 2009 Visiting scholar, Carnegie Mellon University, USA

## 3 Prizes and awards

- 2023 **Rising Star award**, W@Privacy NGO, for transdisciplinary work in law and computer science on consent compliance
- 2022 **Honorable Mention**, "Privacy Papers for Policymakers award" by Future of Privacy Forum for our work on cookie respawning
- 2021 **Honorable Mention**, ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) for the work on dark patterns in consent
- 2021 Prime d'Encadrement Doctoral et de Recherche (PEDR) of Inria, France
- 2018 **ANR JCJC** personal grant by the French National Research Agency (ANR)
- 2017 Prime d'Encadrement Doctoral et de Recherche (PEDR) of Inria, France
- 2012 LabEx postdoctoral fellowship, France
- 2008 PhD grant of the Italian Government with the Best Score among applicants
- 2006 MSc Scholarship of the Ukrainian Government (given to up to 1% of students)

## 4 Scientific Responsibilities

### 4.1 Steering Committee member

- 2022 - ongoing APVP, Atelier sur la Protection de la Vie Privée (French workshop on Privacy Protection)
- 2018 - 2020 ACM PLAS, ACM Workshop on Programming Languages and Analysis for Security

### 4.2 General Chair

- 2025 Dagstuhl seminar on Online Privacy: Transparency, Advertising and Dark Patterns.
- 2022 Privacy Research Day at the CNIL, co-organizer with the LINC team.
- 2018 Atelier sur la Protection de la Vie Privée (French workshop on Privacy Protection), APVP'18
- 2017 Dagstuhl Seminar on Online Privacy and Web Transparency.

### 4.3 Program Committee Chair

- 2023 *Vice-Chair*, USENIX Security Symposium (**Sec'23**)
- 2017 ACM Workshop on Programming Languages and Analysis for Security (PLAS'17)

### 4.4 Award Committees

- 2023 *Committee Member* of CNIL-Inria Privacy Protection Award
- 2022 *Co-President* of CNIL-Inria Privacy Protection Award
- 2021 *Committee Member* of CNIL-Inria Privacy Protection Award
- 2020 *Co-President* of CNIL-Inria Privacy Protection Award
- 2020 *Committee Member* of Caspar Bowden Privacy Enhancing Technologies Award
- 2019 *Co-President* of CNIL-Inria Privacy Protection Award
- 2017 *Committee Member* of Data Transparency Lab Award

### 4.5 Member of the Conference Program Committees

I have been a member of more than 30 technical program committees, including the flagship top-level conferences in security and privacy (highlighted in bold), such as PETS, IEEE S&P and USENIX Security conferences:

- 2024 Privacy Law Scholars Conference (PLSC Europe'24)  
Atelier sur la Protection de la Vie Privée (French workshop on Privacy Protection, APVP'24)
- 2023 *Vice-Chair*, USENIX Security Symposium (**Sec'23**)  
IEEE S&P Workshop on Technology and Consumer Protection (ConPro'23)  
NDSS Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb'23)
- 2022 Privacy Enhancing Technologies Symposium (**PETs'22**)
- 2021 IEEE Symposium on Security and Privacy (**IEEE S&P'21**)  
Privacy Enhancing Technologies Symposium (**PETs'21**)  
IEEE S&P Workshop on Technology and Consumer Protection (ConPro'21)  
NDSS Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb'21)
- 2020 Privacy Enhancing Technologies Symposium (**PETs'20**)  
Security and Privacy Track of TheWeb Conference (**TheWeb 2020**)
- 2019 Privacy Enhancing Technologies Symposium (**PETs'19**)  
IEEE European Symposium on Security and Privacy (**IEEE EuroS&P'19**)  
IEEE Secure Development Conference (IEEE SecDev'19)  
NDSS Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb'19)  
Atelier sur la Protection de la Vie Privée (French workshop on Privacy Protection, APVP'19)

- 2018 International Conference on Principles of Security and Trust (**POST'18**)  
 IEEE Secure Development Conference (IEEE SecDev' 18)  
 Symposium on Electronic Crime Research (eCrime 2018)  
 International Workshop on Programming Technology for the Future Web (ProWeb 2018)  
 IEEE Workshop on Legal and Technical Issues in Cloud Computing and the Internet of Things (CLaw 2018)  
 Atelier sur la Protection de la Vie Privée (French workshop on Privacy Protection, APVP' 18)
- 2017 IEEE Computer Security Foundations Symposium (**IEEE CSF'17**)  
 IEEE Secure Development Conference (IEEE SecDev' 17)  
 ACM Workshop on Programming Languages and Analysis for Security (PLAS' 17)  
 Workshop on Foundations of Computer Security (FCS' 17)  
 International Workshop on Programming Technology for the Future Web (ProWeb' 17)  
 IEEE Workshop on Legal and Technical Issues in Cloud Computing and the Internet of Things (CLaw 2017)  
 Atelier sur la Protection de la Vie Privée (French workshop on Privacy Protection, APVP' 17)  
 International Conference on Math. Methods, Models and Architectures for Computer Networks Security (MMM-ACNS 2017)
- 2013 ACM SIGPLAN Workshop on Programming Languages and Analysis for Security (PLAS' 13)

#### 4.5.1 International Journals

- ACM TOPS, ACM Transactions on Privacy and Security
- ACM TOIT, ACM Transactions on Internet Technology
- IEEE TDCS, Transactions on Dependable and Secure Computing
- JCS, Journal of Computer Security
- ACM TISSEC, ACM Transactions on Information and System Security
- JLAMP, Journal of Logical and Algebraic Methods in Programming
- IJIS, International Journal of Information Security
- JOT, Journal of Object Technology
- IJICS, International Journal of Information and Computer Security

#### 4.6 Scientific Events Organisation

- 2024 Co-organizer of the workshop on Mobilizing Research and Regulatory Action on Dark Patterns at ACM CHI conference
- 2023 Organizer and moderator of the panel on Dark Patterns at the Computers, Privacy and Data Protection (CPDP 2023) conference
- 2021 Organizer and moderator of the panel "*Standard for consent: still a dream or a soon-to-be reality?*" at the Computers, Privacy and Data Protection (CPDP 2021) conference
- 2015 Publication Chair of the International Symposium on Engineering Secure Software and Systems (ESSoS' 15)
- 2014 Publication Chair of the International Symposium on Engineering Secure Software and Systems (ESSoS' 14)

## 4.7 Scientific Exeprtise

- 2024 Member of the hiring committee for Assistant or Full Professor Position in Cybersecurity at Ecole Polytechnique
- 2024 External reviewer of the Canadian Social Sciences and Humanities Research Council (SSHRC)
- 2023 Member of the Inria International Chairs evaluation committee
- 2020 Invited expert for the evaluation committee for ANR AAPG 2020 “CE39 - Securite Globale et Cybersecurite”
- 2019 Member of the hiring committee for an Inria chair position “Enseignement et recherche dans le domaine de la cybersécurité” of École Supelec

## 4.8 PhD committees

- 2024 Feiyang Tang, PhD defense committee (reporter), NTNU (Norway)
- 2024 Nikhil Jha, PhD defense committee (reporter), Politecnico di Torino (Italy)
- 2023 Karel Kubicek, PhD defense committee (reporter), ETH Zurich (Switzerland)
- 2023 Romain Fouquet, PhD defense committee (reporter), University of Lille (France)
- 2022 Maaz Bin Musa, Comprehensive exam committee, University of Iowa (US)
- 2022 Emre Kocyigit, PhD thesis supervision committee, University of Luxembourg (LU)
- 2022 Hanaa Alshareef, PhD defense committee, Chalmers University of Technology (SE)
- 2021 Minh-Kha Nguyen, Comité de suivi de these, University of Grenoble Alpes (FR)
- 2020 Tobias Urban, Institute for Internet Security, Ruhr University Bochum (DE)
- 2019 Antoine Vastel, University of Lille & Inria Lille (FR)
- 2018 Daniel Schoepe, Chalmers University of Technology (SE)
- 2018 Oleksii Starov, Stony Brook University (US)
- 2017 Pierre Laperdrix, INSA Rennes & Inria Rennes (FR)
- 2016 Willem De Groef, KULeuven (BE)

## 4.9 Local responsibilities

- 2024-ongoing Member of the Comité de Centre at Inria Sophia Antipolis.
- 2024-ongoing Member of the Comité de Pilotage of the Academy of Excellence at University Cote d’Azur.
- 2023-ongoing Member of the Comité Parité et Égalité des Chances at Inria, I am involved in the sub-group on International profiles.
- 2017-2021 Member of Comité de Suivi Doctoral (CSD) of Inria Sophia Antipolis. The committee gives a scientific opinion on the hiring and extension of the PhD students’ contracts at Inria and overlooks the overall work of PhD students. The CSD also evaluates candidates for the Inria PhD scholarships (CORDI-S).
- 2019 Member of the jury "soutenance de stage" of the UBINET master of the University of Nice Sophia Antipolis.
- 2018 Member of selection committee of Inria internship program "Masters transverses".

## 5 Research Projects

### 5.1 Industrial Collaborative Projects

**PIA ANSWER** The ANSWER project, “*Advanced aNd Secured Web Experience and seaRch*” (Jan 2018 - Dec 2021) is funded by PIA program. The aim of the ANSWER project is to develop the new version of the <http://www.qwant.com> search engine by introducing radical innovations in terms of search criteria as well as indexed content and users’ privacy. The partners of this project include QWANT and Inria teams Wimmics, Privatics, Indes, Neo and Diana.

## 5.2 National projects

**ANR TULIP** The TULIP project, “*proTéger les Utilisateurs contre les manIPulations en ligne*” (Jan 2024-Dec 2025) is funded by the ANR MRSEI program. In order to protect users from manipulation, deception, and harms caused by dark patterns in digital systems, the TULIP project aims at advancing the knowledge about the cognitive mechanisms used by dark patterns, developing new methods for automatic detection of dark patterns across contexts and tools to help regulators collect evidence of dark patterns. To achieve these ambitious goals, in this project we will advance the research in dark patterns from three dimensions: legal, human-computer interaction and computer science. This project aims at building the consortium to respond to the ERC Synergy program and covers costs to meet with the other co-PIs for the synergy grant and advance the project proposal development.

**PEPR IPoP** The IPoP project included in the PEPR (Programme et Equipement Prioritaires de Recherche) Cybersecurite funded in the France 2030 program starting in 2022 for a duration of 6 years. The IPOP project aims to study the threats to privacy posed by the use of new technologies and emerging services (e.g. health and personal assistants), while complying with current European regulations and preserving the quality of user experience. The issues raised must address technological, societal, legal, economic, political and ethical challenges.

**ANR PrivaWEB** The PrivaWeb project, “*Privacy Protection and ePrivacy Compliance for Web Users*” (Dec 2018 - Nov 2022) is funded by the ANR JCJC personal funding initiative. PrivaWEB aims at developing new methods for detection of new Web tracking technologies and new tools to integrate in existing Web applications that seamlessly protect privacy of users. PrivaWEB is a personal ANR JCJC project.

**ANR AJACS** The AJACS project, “*Analyses of JavaScript Applications: Certification Security*” (Dec 2014 - May 2018) is funded by the ANR. The goal of the AJACS project is to provide strong security and privacy guarantees on the client side for web application scripts. I was involved in the tasks WP2 Certified Analyses and WP3 Security of JavaScript Applications. The partners of this project include Inria teams Celtique (coordinator), Toccata, Indes and Prosecco.

## 5.3 Inria Internal Funding

**AEx DATA4US** AEx DATA4US project, “*Personal DATA Transparency for web USers*” (Feb 2020 - Jan 2022) is a joint project with Cedric Lauradoux (PRIVATICS) granted by Inria exploratory action program. DATA4US tackles these interdisciplinary challenges by establishing collaborations with researchers in Law. DATA4US will propose a new architecture for exercising access rights that will explain the users whether their data has been legally collected and eventually help contact Data Protection Authorities for further investigations.

**ADT FingerKit** In the context of the Inria ADT call, I am involved in a *FingerKit: a Cloud Platform to Study Browser Fingerprints at Large* (2018 - 2020), lead by Walter Rudametkin from the Spirals project-team, Inria Lille. The funding for a two year engineering position was obtained and an engineer is hired in Spirals project-team.

**Actions Marquantes** The joint project with Arnaud Legout from Inria Diana team “*User discrimination on the Web: measurement, causation and prevention*” (Dec 2016 - Nov 2017) is funded by Inria Sophia Antipolis Actions Marquantes initiative. The goal of this project is to detect when users get discriminated on the Web, what are the technologies used to discriminate users and how we can prevent it without breaking the functionality and sometimes useful personalisation within Web applications.

## 6 Teaching

- 2018 - 2021      Lecturer for “**Privacy on the Internet**”, SKEMA Business school, France  
Program: Master in Digital Business  
Level M2, 15h ETD per year
- 2018 - 2021      Lecturer for “**Privacy, Security and Ethical aspects of Data**”, Université Côte d’Azur, France  
Program: Master in Data Science  
Level M1, 18h ETD per year
- 2018 - 2019      Lecturer for “**Web Privacy**”, University of Trento, Italy  
Level PhD, 30h ETD per year
- 2015 - 2018      Lecturer for “**Développements d’Applications Réticulaires**”, University Pierre et Marie Curie - UPMC, France  
Level M2, 15h ETD per year
- 2012 - 2013      Teaching Assistant for “**Sécurité des systèmes d’information**”, University of Rennes 1, France  
Level M2, 19h ETD
- 2012 - 2013      Teaching Assistant for “**Compilation**”, INSA Rennes, France  
Level M1, 20h ETD

### 6.1 E-learning

In 2018, together with Cédric Lauradoux and Vincent Roca (Inria PRIVATICS team), we have designed a Massive Open Online Course (MOOC) entitled “*Protection de la vie privée dans le monde numérique*”. From 2018 till January 2022, the MOOC has been open for 4 sessions and attracted in total **over 43,000 French-speaking participants** from all over the world. Since January 2021, the course is archived and can be freely accessed: <https://www.fun-mooc.fr/courses/course-v1:inria+41015+archiveouvert/about>.

## 7 Publications

All my papers are available on [my homepage](#), and citations can be checked on my [Google Scholar page](#).

### 7.1 International peer-reviewed journals

1. N. Bielova, C. Santos, and C. M. Gray. Two worlds apart! closing the gap between regulating EU consent and user studies. *Harvard Journal of Law & Technology (JOLT)*, 37, 2024. Accepted for publication
2. I. Fouad, C. Santos, A. Legout, and N. Bielova. My cookie is a phoenix: detection, measurement, and lawfulness of cookie respawning with browser fingerprinting. *Proceedings on Privacy Enhancing Technologies Symposium (PoPETs)*, 2022:79–98, 2022
3. M. Toth, N. Bielova, and V. Roca. On dark patterns and manipulation of website publishers by CMPs. *Proceedings on Privacy Enhancing Technologies Symposium (PoPETs)*, 2022(3):478–497, 2022
4. C. Santos, N. Bielova, and C. Matte. Are cookie banners indeed compliant with the law? deciphering EU legal requirements on consent and technical means to verify compliance of cookie banners. *Technology and Regulation (TechReg)*, pages 91–135, 2020
5. P. Laperdrix, N. Bielova, B. Baudry, and G. Avoine. Browser fingerprinting: A survey. *ACM Transactions on the Web (TWEB)*, 14(2):8:1–8:33, 2020

6. I. Fouad, N. Bielova, A. Legout, and N. Sarafijanovic-Djukic. Missed by filter lists: Detecting unknown third-party trackers with invisible pixels. *Proceedings on Privacy Enhancing Technologies Symposium (PoPETs)*, 2020, 2020
7. N. Bielova. Survey on JavaScript security policies and their enforcement mechanisms in a web browser. *Journal of Logic and Algebraic Programming (JLAP)*, 82(8):243 – 262, 2013
8. N. Bielova and F. Massacci. Iterative enforcement by suppression: Towards practical enforcement theories. *Journal of Computer Security*, 20(1), 2012
9. N. Bielova and F. Massacci. Do you really mean what you actually enforced? *International Journal of Information Security*, pages 239–254, 2011
10. N. Bielova, N. Dragoni, F. Massacci, K. Naliuka, and I. Siahaan. Matching in security-by-contract for mobile code. *Journal of Logic and Algebraic Programming (JLAP)*, 78(5):340–358, 2009

## 7.2 Peer-reviewed international conferences

1. N. Bielova, L. Litvine, A. Nguyen, M. Chammat, V. Toubiana, and E. Harry. The effect of design patterns on (present and future) cookie consent decisions. In *USENIX Security Symposium*, 2024. Accepted for publication
2. C. M. Gray, C. Santos, N. Bielova, and T. Mildner. An ontology of dark patterns knowledge: Foundations, definitions, and a pathway for shared knowledge-building. In *ACM CHI Conference on Human Factors in Computing Systems (ACM CHI)*, 2024. Accepted for publication
3. C. Gray, C. Santos, N. Bielova, M. Toth, and D. Clifford. Dark patterns and the legal requirements of consent banners: An interaction criticism perspective. In *ACM CHI Conference on Human Factors in Computing Systems (ACM CHI)*, pages 1–18, 2021
4. C. Santos, M. Nouwens, M. Toth, N. Bielova, and V. Roca. Consent management platforms under the gdpr: processors and/or controllers? In *Annual Privacy Forum (APF)*, 2021
5. C. Matte, N. Bielova, and C. Santos. Do cookie banners respect my choice? measuring legal compliance of banners from iab europe’s transparency and consent framework. In *IEEE Symposium on Security and Privacy (IEEE S&P)*, volume 1, pages 791–809, 2020
6. C. Matte, C. Santos, and N. Bielova. Purposes in iab europe’s tcf: which legal basis and how are they used by advertisers? In *Annual Privacy Forum (APF)*, pages 163—185, 2020
7. C. Boniface, I. Fouad, N. Bielova, C. Lauradoux, and C. Santos. Security analysis of subject access request procedures - how to authenticate data subjects safely when they request for their data. In *Annual Privacy Forum (APF)*, volume 11498, pages 182–209, 2019
8. M. Ngo, N. Bielova, C. Flanagan, T. Rezk, A. Russo, and T. Schmitz. A better facet of dynamic information flow control. In *Web Programming, Design, Analysis, And Implementation (WPDAl) alternate track of The Web Conference (WWW)*, pages 731–739, 2018
9. D. F. Somé, N. Bielova, and T. Rezk. Control what you include! server-side protection against third party web tracking. In *International Symposium on Engineering Secure Software and Systems (ESSoS)*, volume 10379, pages 115–132, 2017
10. D. F. Somé, N. Bielova, and T. Rezk. On the content security policy violations due to the same-origin policy. In *International Conference on World Wide Web (WWW)*, pages 877–886, 2017
11. N. Bielova and T. Rezk. Spot the difference: Secure multi-execution and multiple facets. In *European Symposium on Research in Computer Security (ESORICS)*, volume 9878, pages 501–519, 2016
12. F. Besson, N. Bielova, and T. Jensen. Hybrid information flow monitoring of attacker knowledge. In *IEEE Computer Security Foundations Symposium, CSF’16*, pages 225–238. IEEE, 2016

13. N. Bielova and T. Rezk. A taxonomy of information flow monitors. In *Principles of Security and Trust International Conference (POST)*, volume 9635, pages 46–67, 2016
14. F. Besson, N. Bielova, and T. Jensen. Browser Randomisation against Fingerprinting: A Quantitative Information Flow Approach. In *Nordic Conference on Secure IT Systems (NordSec)*, pages 181–196, 2014
15. F. Besson, N. Bielova, and T. Jensen. Hybrid information flow monitoring against web tracking. In *IEEE Computer Security Foundations Symposium (CSF)*, pages 240–254, 2013
16. N. Bielova, D. Devriese, F. Massacci, and F. Piessens. Reactive non-interference for a browser model. In *International Conference on Network and System Security (NSS 2011)*, pages 97–104, 2011
17. N. Bielova and F. Massacci. Computer-aided generation of enforcement mechanisms for error-tolerant policies. In *IEEE International Symposium on Policies in Distributed Systems and Networks (POLICY)*, pages 89–96, 2011
18. N. Bielova and F. Massacci. Predictability of enforcement. In *International Symposium on Engineering Secure Software and Systems (ESSoS)*, volume 6542, pages 73–86, 2011
19. N. Bielova, F. Massacci, and A. Micheletti. Towards practical enforcement theories. In *Nordic Conference on Secure IT Systems (NordSec)*, volume 5838, pages 239–254, 2009
20. N. Bielova, M. Dalla Torre, N. Dragoni, and I. Siahaan. Matching policies with security claims of mobile applications. In *International Conference on Availability, Reliability and Security (ARES)*, pages 128–135, 2008

### 7.3 Peer-reviewed international workshops and short papers

1. V. Wesselkamp, I. Fouad, C. Santos, Y. Boussad, N. Bielova, and A. Legout. In-Depth Technical and Legal Analysis of Tracking on Health Related Websites with ERNIE Extension. In *Workshop on Privacy in the Electronic Society (WPES)*, 2021
2. I. Fouad, C. Santos, F. Al Kassar, N. Bielova, and S. Calzavara. On Compliance of Cookie Purposes with the Purpose Specification Principle. In *International Workshop on Privacy Engineering (IWPE)*, pages 326–333, 2020
3. G. G. Gulyás, D. F. Somé, N. Bielova, and C. Castelluccia. To extend or not to extend: On the uniqueness of browser extensions and web logins. In *Workshop on Privacy in the Electronic Society (WPES)*, pages 14–27, 2018
4. N. Bielova. Short paper: Dynamic leakage: A need for a new quantitative information flow measure. In *ACM Workshop on Programming Languages and Analysis for Security (PLAS)*, pages 83–88, 2016
5. T. Vissers, N. Nikiforakis, N. Bielova, and W. Joosen. Crying Wolf? On the Price Discrimination of Online Airline Tickets. In *Workshop on Hot Topics in Privacy Enhancing Technologies (HotPETs)*, 2014
6. N. Bielova and F. Massacci. Do you really mean what you actually enforced? In *International Workshop on Formal Aspects in Security and Trust*, volume 5491, pages 287–301, 2008
7. N. Bielova and I. Siahaan. Testing decision procedures for security-by-contract. In *Joint Workshop on Foundations of Computer Security, Automated Reasoning for Security Protocol Analysis and Issues in the Theory of Security (FCS-ARSPA-WITS)*, 2008



## 7.4 Contribution to the Data Protection Authorities and EDPB

1. C. Santos, N. Bielova, V. Roca, M. Cunche, G. Mertens, and et al. Feedback to the european data protection board’s guidelines 2/2023 on technical scope of art. 5(3) of eprivacy directive. Technical report, <https://inria.hal.science/hal-04437008>, 2024
2. M. Toth, N. Bielova, C. Santos, V. Roca, and C. Matte. Contribution to the public consultation on the CNIL’s draft recommendation on ”cookies and other trackers”. Technical report, <https://hal.inria.fr/hal-02490531>, 2020
3. N. Bielova and C. Santos. Feedback to the EDPB regarding Guidelines 07/2020 on the concepts of controller and processor in the GDPR. Technical report, <https://inria.hal.science/hal-04437019>, 2020
4. N. Bielova and C. Santos. Feedback to the Guidelines on the use of cookies and other tracking tools of the Italian Data Protection Authority. Technical report, <https://hal.inria.fr/hal-03079482>, 2020

## 8 Dissemination of scientific knowledge

I have been an invited speaker and invited lecturer at international conferences, workshops and summer schools. In this section I also present scientific mediation and popularization activities I have carried out (full list and details can be found on [my website](#)).

### 8.1 Keynotes at international events

- **Privacy Enhancing Technologies Symposium (PETS 2024)**. The annual computer science conference for privacy technologies (Bristol).
- **Mapping and Governing the Online Worlds (MGOW 2024)**. The conference bringing researchers from law, economics, computer science and related fields (Ascona).
- **International workshop on Designing Security for the Web (SecWeb) (2021)**. The annual computer science workshop for Web security and privacy. Audience: 40 (remote).

### 8.2 Selected invited talks at international events

- **“Towards Neuro Ethics rights” Workshop (2023)**. A series of workshops for law and computer science experts. Audience: 20 in-person with online streaming (Paris).
- **Harvard Law School Symposium on the Future of Privacy Enforcement (2023)**. The first symposium gathering privacy experts in law and computer science. Audience: 30 in-person with online streaming (Cambridge).
- **US Federal Trade Commission, PrivacyCon event (2021)**. Our work [20] was selected by the FTC and presented by my PhD student, I. Fouad. Audience: 50 (remote).
- **TILTING Perspectives (2021)**. Invited panel speaker. Organized by **TILT research group** and gathered researchers, practitioners, policy makers, and civil society at the intersection of law and regulation. Audience: 40 (remote).
- **Mozilla Security Summit (2019)**. Invite-only event gathering computer science experts from academia and industry in Web application security and privacy. Audience: 50 (in-person, Vienna).
- **Meeting on EU ePrivacy Regulation at the EU Parliament (2017)**. Invite-only event bringing together EU policy-makers, and experts in online privacy from academia and industry. Audience: 20 (in-person, Brussels).
- **International Conference on Runtime Verification (2013)**. Invited panel speaker. Audience: 80 (in-person, Rennes).

### 8.3 Selected invited talks at EU national events and lecture series

- **UK Cyber Security and Privacy seminar series** (2023). Invited talk for computer scientists. Audience: 40 (remote).
- **Belgian CIF seminars at KULeuven** (2021) with Cristiana Santos, interdisciplinary seminar for computer science and law communities. Audience: 30 (remote).
- **Dutch ICT.OPEN event, track “Security and Privacy”** (2020). Keynote talk. Audience: 80 (remote).
- **French Deep Law for Tech webinar series** (2020) with Cristiana Santos, for law community. Audience: 30 (remote).

### 8.4 Plenary keynotes at French national conferences

- Keynote on dark patterns and consumer manipulation at the **Association Française d’Économie du Droit (AFED 2023)**, the annual conference of the French law and economics community. Audience: 80 (in-person, Nice).
- Keynote on technical and legal aspects of online consent at the **"Consentir" sur le Web 2023** conference for the French legal, economics, social science and computer science communities. Audience: 40 (remote).
- Keynote on Web tracking and GDPR at the **Atelier sur la Protection de la Vie Privée" (APVP 2019)**, the annual French workshop on privacy protection, computer science community. Audience: 60 (in-person, Cap Hornu).

### 8.5 Other selected talks

**Participation to invite-only events.** In addition to the invite-only events mentioned above, I was invited to the Lorentz Center Seminar (similar to Dagstuhl but for other fields than computer science) on **Fair patterns for online interfaces** (2024), and to the Dagstuhl seminars: **Verifiably Secure Process-Aware Information Systems** (2013), and **Web Application Security** (2012).

**Seminal work on consent compliance.** I was among the first researchers to work on consent mechanisms and its compliance with the GDPR in Web applications, which has become an emerging topic in privacy, combining law and computer science fields. I led the research effort and we were the first to propose a rigorous analysis of legal requirements for consent compliance and a scalable compliance auditing mechanism for consent banners. Our results, published in law journal TechReg [33] and IEEE Symposium on Security and Privacy [27], in total has been **cited 320+ times**.

**Invited talks at the EU and international regulators and NGOs.** In addition to the events mentioned above, I was invited to present my research to NGO and regulatory authorities: French Data Protection Authority (CNIL) and NGO NOYB in 2019, Organisation for Economic Co-operation and Development (OECD) in 2021, and Dutch Data Protection Authority in 2024.

## 8.6 Invited lectures

- 2021 “Legal and technical requirements for consent” with Cristiana Santos at University of Strathclyde, Glasgow, UK
- 2019 Invited lecture on GDPR consent mechanisms in Web applications at the Summer School on Cybersecurity, Université Cote d’Azur, France
- 2018 Tutorial on Web Tracking Technologies at TheWeb’18 International conference, Lyon, France
- 2018 Invited lecture on Web tracking technologies and protection mechanisms at Carnegie Mellon University, USA
- 2018 Invited lecture on Web Privacy at the Summer School ResCom, France
- 2018 Invited lecture on Web tracking technologies at SKEMA Business school, France
- 2018 Invited lecture on Web Tracking, Privacy and Transparency Measurements at the Summer School on Cybersecurity, Université Cote d’Azur, France
- 2017 Invited lecture on Web tracking technologies and protection mechanisms at Carnegie Mellon University, USA
- 2017 Invited lecture on Web Tracking Technologies at Igor Sikorsky Kiev Polytechnic Institute, Kiev, Ukraine

## 8.7 Mentorship

- 2020 Presentation to female MSc students of UBINET on career in research, Nice, France.
- 2019 Presentation to BSc and MSc students during the ACM-W Ukrainian Chapter celebration, Kiev, Ukraine. <https://women.acm.org/2019-2020-celebrations/>

## 8.8 Popularization of scientific knowledge and interviews by the media

**Popularisation of scientific knowledge.** In 2013, I presented the preliminary slides on Web tracking technologies at **Inria Conf’Lunch**. The complete version of this talk was presented as a **tutorial on Web tracking technologies** at the WWW 2018 conference. In 2016, I co-authored an **article in ERCIM news** magazine on browser fingerprinting. In 2019, I was a contributor to the **Inria white book on Cybersecurity**. I made an intervention with high school students on the online privacy and data collection during “Semaine De La Science” in 2019. I presented our work on Web tracking to medium- and high-school students during Inria open doors in 2019. I am one of the three authors of the massive open online course for the general public, “**Privacy protection in the digital world**” coordinated by the **Inria Learning Lab** that has been open for 4 sessions and attracted in total **over 43,000 French-speaking participants** from all over the world.

**Interviews and media coverage.** In 2014, I gave an interview about our study on price discrimination at the Science et Vie magazine (1177). In 2017, I was interviewed by **DCloudNews** and by **the French Data Protection Authority (CNIL)** about our browser fingerprinting experiment. This experiment was also covered by **TheRegister.co.uk**. In 2018, I gave an interview to **NiceMatin** about browser protection tools. In 2019, I was interviewed by **l’OBS** and **UsineDigitale** on the GDPR principles and data breaches. In 2020, **MediaPart** and **the CNIL** interviewed me about our work legal compliance of consent banners. This work was also covered by the media in **LeMonde.fr**, **Business Insider** and **NextImpact**. In 2021, I was interviewed by **VICE** about dark patterns in consent banners. In 2022, I was interviewed by **Wired.com** on our survey of browser fingerprinting. Also in 2022, **LeMonde.fr** interviewed me for our work on stateful web tracking and cookie respawning.

A complete list of my outreach activities can be found on **my website**.

