Offre n°2024-07498

Doctorant F/H [DOCT2024-PRIVATICS] Web tracking companies, tag managers and their compliance with EU competition law

Type de contrat : CDD
Niveau de diplôme exigé : Bac + 5 ou équivalent
Fonction : Doctorant

A propos du centre ou de la direction fonctionnelle

Le centre Inria d'Université Côte d'Azur comprend 37 équipes de recherche et 8 services d'appui. Le personnel du centre (environ 500 personnes) est composé de scientifiques de différentes nationalités, d'ingénieurs, de techniciens et de personnel administratif. Les équipes sont principalement localisées sur les campus universitaires de Sophia Antipolis et de Nice ainsi qu'à Montpellier, en étroite collaboration avec les laboratoires et établissements de recherche et d'enseignement supérieur (Université Côte d'Azur, CNRS, INRAE, INSERM ...), mais aussi avec les acteurs économiques régionaux.

Présent dans les domaines des neurosciences et de la biologie computationnelles, de la science des données et de la modélisation, du génie logiciel et de la certification, ainsi que de la robotique collaborative, le Centre Inria d'Université Côte d'Azur est un acteur majeur de l'excellence scientifique par ses résultats et ses collaborations au niveau européen et international.

Contexte et atouts du poste

This position is funded directly by Inria and will be hosted at Inria Centre at Université Côte d'Azur within the PRIVATICS team. The position will be advised by Nataliia Bielova and co-advised by Frederic Marty and Simone Vannuccini from the Groupe de Recherche en Droit, Economie, Gestion (GREDEG).

The PRIVATICS team applies an interdisciplinary approach to privacy combining technical investigations with economic and legal compliance auditing. Nataliia Bielova’s research aims at automatic compliance auditing of websites, detecting Web tracking technologies on thousands of websites and analysing cookie banners from both technical and legal perspectives. She has been focusing on the compliance of websites with the General Data Protection Regulation (GDPR) and is a former member of the French Data Protection Authority (CNIL).

GREDEG is a mixed research unit (UMR) of the CNRS and the Université Côte d'Azur. Its researchers work in the fields of law, economics, management, and sociology. Within the UMR, the work of Frédéric Marty and Simone Vannuccini focuses on the economy of the digital sector from an Industrial Organization perspective. Simone Vannuccini works on innovation, industrial trajectories and artificial intelligence, and Frédéric Marty expertise is on competition issues in the digital sector from a competition law and economics perspective. Frédéric Marty is also a former Member of the College of the French Competition Authority (Autorité de la Concurrence).

Mission confiée

Today’s websites continuously track users and collect their data for various purposes. Web tracking ecosystem is currently adapting to the new rules: Google has started to deprecate third-party cookies since early 2024, while other browser vendors (Safari, Firefox, Brave) already have built-in tracking protection. However, website publishers do not implement such web tracking themselves: Tag managers (such as Google Tag Manager) propose publishers an easy integration of tracking functionality into the websites. Therefore, the information about users’ browsing history is in hands of a few companies that pose significant risks on users’ privacy. The research theme for the PhD will aim at the use of large-scale crawling to detect advanced Web tracking technologies in websites and identify the major tag management and tracking companies. The results will be analysed from the economic perspective to evaluate the prevalence and market power of companies that deploy and facilitate Web tracking and compliance of these practices with the EU competition law.

The functioning of tags and Google’s role in tag management tools may raise a number of competition concerns. First, Google’s position in relation to publishers may give it a decisive informational advantage in that it can benefit from an overall view of the activity of all the users of its services whereas each of them, in isolation, can only access data related to its own activity through Google. The issue is therefore whether the company is in a position to abuse its dominant position through an exploitation abuse. Secondly, the owner of the tag manager, in this case Google, has a decisive informational advantage over
user companies and may be in a position to implement self-preferencing strategies, i.e. to manipulate the results provided to its advantage. Equivalent practices were already sanctioned by the European Commission. It is therefore necessary to identify the possible presence of these strategies on this specific digital market, which is all the more decisive in that it is linked to the online advertising sector, which is the focus of much interest from the competition authorities and may violate the competition laws in the EU.

While the advertising market has been studied thoroughly by competition and innovation scholars, the Tag Manager case has not been examined in depth yet, despite having evident value as a domain where abuse of dominant position and other anticompetitive behaviours might take place. This makes the PhD project related to the position timely, with a well-defined scope, and rather novel in focus. Furthermore, the large scale, granular measurement required by the project will provide a unique source of quantitative data capable of informing the debate on competition concerns – this in itself will be a sizeable contribution to the literature and practice.

The main responsibility of the PhD candidate will be to lead the research project on the detection of Web tracking and Tag managers at scale (under the supervision of Nataliia Bielova), and analyze the findings in the scope of competition law and economics and anti-trust compliance (under the supervision of Frederic Marty and Simone Vannuccini). The PhD candidate, if interested, can also make short-term research visits to the existing and new collaborators within the research agenda.

The candidate should be motivated to publish the research results at relevant top-tier computer science conferences (such as USENIX Security, IEEE Security and Privacy, Privacy Enhancing Technologies Symposium (PoPETs), The Web Conference, Internet Measurement Conference). Additionally, an ideal candidate will be interested in transdisciplinary collaborations and contributing to publications in the fields of industrial organization and competition law and economics.

**Principales activités**

**Phase I. Computer Science: detection and evolution of Web tracking and Tag Managers** To detect new web tracking technologies and tags that employ them, the first step is rely on the new research methodology to study services “from inside”, by pretending to be the service or tag users [3]. We will then propose new algorithms to detect new forms of Web tracking and perform a large-scale measurement study [1,2] to demonstrate the prevalence and use of such tracking at scale. However, such measurement studies are not enough to understand the incentives of websites to include such tags with invasive tracking. At the same time, website publishers are continuously installing such tags with the help of “tag manager systems”, such as Google Tag Manager (GTM) [4]. GTM has become widely adopted by websites and is currently used on 49% of top 10K websites. GTM is a free service, offering a graphical interface and supporting a seamless inclusion of major marketing and analytic tags. However, GTM has the power to promote its own tags, and therefore incentivize website publishers to install Google-owned tags that collect users data. The next step will aim at studying the evolution of GTM and other tag manager systems over time (relying on Wayback machine) alongside with the evolution of new forms of Web tracking to identify the key tag managers and tags that collect user data. This large scale analysis will help us identify the main tracking and tags services, their functionality and efficiency in collecting data of the users.

This first step will answer the following research questions:

Q1.1: What are the new types of tracking technologies post-third party cookie?

Q1.2: What are the strategies tag managers use to push for the adoption of its own tracking services?

Q1.3: What is the prevalence of tracking services and tag managers on the Web and its evolution over time?

**Phase II. Industrial Organization and Competition Law and Economics.** The goal here is to determine whether the operation of GTM as described above may give rise to competition law concerns and, if so, to quantify the extent of any distortion of competition. The objective is therefore, in the words of competition litigation, to establish “the theory of damage”. This identification is central in the context of a competition procedure in that it prevents the risk of false negatives or false positives and makes it possible to assess the effects of the practices. This identification is also important for the firm, which is required by EU competition rules to self-assess the compliance of its practices. Offering a tool for measuring and therefore identifying risks is therefore important for the firm itself as part of a compliance policy. A final objective relates to the monitoring of the behavioural injunctions presented above. Numerous issues relating to competition concern the measurement of the effects of the corrective measures imposed. The aim of the thesis is therefore not only to provide tools to inform the competitive decision and to determine what the appropriate corrective measures might be, but also to ensure that they are monitored and, if necessary, to trigger additional sanctions in the event of non-compliance or to envisage their correction if rendez-vous clauses are provided for. Furthermore, the project will place this case in context within existing approaches in the economics of industrial organization and competitive markets, assessing whether the Tag Manager case fits within analytical frameworks already developed and tested in other markets and contexts.
Phase II will address the following research questions:

Q2.1: What are economic incentives for Google to push for its services and are such distortions observable and significant in terms of markets?
Q2.2: How to separate compliant behavior from anti-competitive practices (to suggest to regulators)?
Q2.3: How to craft behavioural remedies if we find that Google is abusing its position?
Q2.4: How to assess the compliance of firm's behaviours with these remedies and how to adjust them if necessary during their implementation?

References

Imane Fouad, Nataliia Bielova, Arnaud Legout, Natasa Sarafijanovic-Djukic.
Privacy Enhancing Technologies (PoPETs 2020).

[2] My Cookie is a phoenix: detection, measurement, and lawfulness of cookie respawning with browser fingerprinting
Imane Fouad, Cristiana Santos, Arnaud Legout, Nataliia Bielova.
Privacy Enhancing Technologies Symposium (PoPETs 2022).


Compétences

Master degree in Computer Science required. Programming skills in Web technologies.
High level of interest in economic aspect of Web technologies, and in particular competition policy is highly appreciated.

Fluent English required, both oral and written.
Knowledge of French is not required.

Avantages

- Repas subventionnés
- Remboursement partiel des frais de transport en commun
- Congés : 7 semaines de congés annuels + 10 jours de congés supplémentaires au titre de la RTT (réduction légale du temps de travail) + possibilité de congés exceptionnels (enfants malades, déménagement, etc.)
- Possibilité de télétravail (après 6 mois d’activité) et d’aménagement du temps de travail
- Mise à disposition de matériel professionnel (visioconférence, prêt de matériel informatique, etc.)
- Manifestations et activités sociales, culturelles et sportives
- Accès à la formation professionnelle
- Couverture sociale

Rémunération

1ère et 2ème année : 2 100 euros brut /mois
3ème année : 2190 euros brut / mois

Informations générales

- Thème/Domaine : Sécurité et confidentialité
- Production, traitement et analyse des données (BAP D)
- Ville : Sophia Antipolis
- Centre Inria : Centre Inria de l'Université Grenoble Alpes
- Date de prise de fonction souhaitée : 2024-11-01
- Durée de contrat : 3 ans
- Date limite pour postuler : 2024-04-28
Contacts

- Équipe Inria : PRIVATICS
- Directeur de thèse :
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A propos d'Inria

Inria est l’institut national de recherche dédié aux sciences et technologies du numérique. Il emploie 2600 personnes. Ses 215 équipes-projets agiles, en général communes avec des partenaires académiques, implantent plus de 3900 scientifiques pour relever les défis du numérique, souvent à l'interface d'autres disciplines. L'institut fait appel à de nombreux talents dans plus d'une quarantaine de métiers différents. 900 personnels d'appui à la recherche et à l'innovation contribuent à faire émerger et grandir des projets scientifiques ou entrepreneuriaux qui impactent le monde. Inria travaille avec de nombreuses entreprises et a accompagné la création de plus de 200 start-up. L'institut s'efforce ainsi de répondre aux enjeux de la transformation numérique de la science, de la société et de l'économie.

Attention : Les candidatures doivent être déposées en ligne sur le site Inria. Le traitement des candidatures adressées par d'autres canaux n'est pas garanti.

Consignes pour postuler

Avant de postuler, il est fortement recommandé de prendre contact avec le responsable scientifique.

Sécurité défense :
Ce poste est susceptible d'être affecté dans une zone à régime restrictif (ZRR), telle que définie dans le décret n°2011-1425 relatif à la protection du potentiel scientifique et technique de la nation (PPST). L'autorisation d'accès à une zone est délivrée par le chef d'établissement, après avis ministériel favorable, tel que défini dans l'arrêté du 03 juillet 2012, relatif à la PPST. Un avis ministériel défavorable pour un poste affecté dans une ZRR aurait pour conséquence l'annulation du recrutement.

Politique de recrutement :
Dans le cadre de sa politique diversité, tous les postes Inria sont accessibles aux personnes en situation de handicap.