

Bachelorarbeiten

Vergabeverfahren und Themen

Lehrstuhl für Electronic Commerce
Prof. Dr. Bernd Skiera

Wintersemester 2022/2023

Allgemeine Hinweise

Allgemeine Hinweise zu den Voraussetzungen zur Bearbeitung von Bachelorarbeiten finden Sie unter:

<http://www.wiwi.uni-frankfurt.de/studium/studierende/pruefungsorganisation/allgemeine-informationen/bachelorarbeit.html>

Bitte beachten Sie: Es findet keine Vergabe von Abschlussarbeitsplätzen außerhalb des zentralen QIS-Vergabeverfahrens statt!

Fristen

Aktuelle Fristen finden Sie unter:

<http://www.wiwi.uni-frankfurt.de/studium/studierende/pruefungsorganisation/pruefungen/fristen.html>

Bearbeitungshinweise

Hinweise zum Bearbeiten von Bachelorarbeiten sowie eine Musterdatei des Marketing Schwerpunkts finden Sie unter:

<http://www.marketing.uni-frankfurt.de/studium/anleitung-zum-wissenschaftlichen-arbeiten.html>

Bewertungsvorlage

Ein erster Anhaltspunkt für die Benotung der Bachelorarbeiten ergibt sich aus folgendem Bewertungsschlüssel:

https://www.marketing.uni-frankfurt.de/fileadmin/user_upload/dateien_abteilungen/abt_marketing/Dokumente/Bachelorarbeiten/Gutachten-Bachelorarbeit_Lehrstuhl_Skiera.pdf

Kontakt bei Fragen zur Vergabe der Bachelorarbeiten

Orian Mahlow



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1. Schritt: QIS Anmeldung

Melden Sie sich fristgerecht über das QIS-System für einen Bachelorarbeitsplatz an. Wählen Sie hier als Betreuer Prof. Dr. Bernd Skiera aus.

2. Schritt: Themenvergabe

Wenige Tage nach Anmeldeschluss erhalten wir vom Prüfungsamt die Liste aller erfolgreichen Anmeldungen. Wir werden Sie nun unter Ihrer Studenten-Email-Adresse (@stud.uni-frankfurt.de) kontaktieren um die Vergabe der Themen zu koordinieren. Per E-Mail werden wir Ihnen das genaue Vorgehen zur Vergabe der Themen detailliert erläutern. Die Details zur Vergabe der Themen finden Sie auch auf der nächsten Folie.

3. Schritt: Termin mit Betreuer

Vereinbaren Sie, zügig nachdem Ihnen Ihr Bachelorarbeitsthema mitgeteilt wurde, einen Termin mit Ihrem Betreuer.

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Es gibt zwei Möglichkeiten für die Findung eines Bachelorarbeitsthemas:

1. Sie wählen ein vom Lehrstuhl vorgeschlagenes Bachelorarbeitsthema („Normalfall“)

Bitte treffen Sie in jedem Fall (auch wenn Sie ein eigenes Thema für Ihre Bachelorarbeit vorschlagen möchten) unter den nachfolgend ausgeschriebenen Themen ein Ranking Ihrer 5 Wunscthemen. Sie bekommen von uns, sofern möglich, ein Thema gemäß Ihrer Themenpräferenzen zugeteilt.

2. Sie schlagen ein eigenes Thema für Ihre Bachelorarbeit vor

Wenn Sie ein eigenes Thema bearbeiten möchten, schicken Sie uns eine Datei in der Sie kurz Ihren Themenvorschlag vorstellen. Erklären Sie auf dort (1) welches Problem Sie lösen möchten, (2) warum Ihr Problem interessant ist und (3) wie Sie das Problem lösen möchten (z.B. welche Daten Sie verwenden wollen). Ein guter Grund für die Verwendung eines eigenen Themas ist beispielsweise eine empirisch ausgerichtete Arbeit, die auf Daten aufbaut, die Ihnen zur Verfügung stehen. Wir sind grundsätzlich auch bereit Bachelorarbeiten zu betreuen, welche zum Ziel haben, die im Rahmen von Datamining-Wettbewerben ausgeschriebenen Problemstellungen zu lösen (Beispiel <https://www.kaggle.com/c/avazu-ctr-prediction>).

Ihren Themenvorschlag werden wir am Lehrstuhl diskutieren. Wenn wir Ihr vorgeschlagenes Thema für geeignet halten, können Sie es bearbeiten. Sollten wir Ihr vorgeschlagenes Thema für ungeeignet halten, bearbeiten Sie das Ihnen vom Lehrstuhl zugeteilte Thema.

Kontakt bei Fragen zur Vergabe der Bachelorarbeiten

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In ihrem Studium haben Sie in einer ganzen Reihe an Veranstaltungen Kenntnisse erhalten, die Ihnen das empirische Arbeiten ermöglichen.

Professor Skiera selbst unterrichtet seit vielen Jahren die Veranstaltung PMAR („Marketing Analytics“), die eine Pflichtveranstaltung für die Wahl des Schwerpunkts Management ist. In dieser Veranstaltung haben Sie das Arbeiten mit der Software R/RStudio sowie das Anwenden von Verfahren wie der linearen und der logistischen Regressionsanalyse kennengelernt. Wir erwarten, dass Sie über derartige Kenntnisse verfügen, wobei Sie auch gerne andere Software, z.B. Python oder Stata, einsetzen können.

Ohne ein gewisses empirisches Toolkit, wird Ihnen die Bearbeitung der meisten Themen schwer fallen.

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Ausgeschriebene Themen

Hinweis:

Bitte beachten Sie die terminlichen Verfügbarkeiten der jeweiligen Betreuerinnen und Betreuer!

Should Users Care About Online Privacy? An Overview of Arguments For (and Against) Caring About Online Privacy

Overview

Smith et al. (1996) defines (online) privacy as the ability of a user to control information about oneself. Regulators worldwide believe that privacy, especially online privacy, is valuable, so they try to protect it by introducing online privacy laws (e.g., GDPR, CCPA, PIPL). But users are different. Some users care more about online privacy (i.e., believe it is valuable) than others (Bergström, 2015). Users who care about online privacy argue about why they do so. Likewise, users who do not care about online privacy, with arguments like “Anyone that has the resources and motivation can find out anything they want to know about me,” argue why online privacy is not valuable.

So, this thesis should present convincing arguments for (and against) caring about online privacy from the users' perspective to conclude: Should users care about online privacy?

Requirements

- High interest in the topic
- Willingness to do a literature review

Language

English

Literature

Angwin, J. (2014), *Dragnet Nation: A Quest for Privacy, Security, and Freedom in a World of Relentless Surveillance*, New York, New York, USA: Times Books.

Bergström, A. (2015), “Online Privacy Concerns: A Broad Approach to Understanding the Concerns of Different Groups for Different Uses”, *Computers in Human Behavior*, 53, 419–26.
<https://doi.org/10.1016/j.chb.2015.07.025>.

Smith, H. J., Milberg, S. J. & Burke, S. J. (1996), “Information Privacy: Measuring Individuals' Concerns about Organizational Practices”, *MIS Quarterly*, 20(2), 167-96.
<https://doi.org/10.2307/249477>.

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What Data Does the AdTech Firm Collect About Online Users?

Overview

Today, online tracking—the practice of collecting users' data (e.g., IP address, visited URLs) over time—fuels a billion-dollar AdTech industry (Sluis, 2021). Online tracking has an essential role in the AdTech industry because, among others, it allows targeted advertising of users. Yet, we know little about what data firm(s) in the AdTech industry (e.g., a site or a tracker provider) possess about online users (Urban et al., 2019).

This thesis aims to find what data an AdTech firm possesses about them. More importantly, what insights could an AdTech firm derive from that user's data? According to GDPR, a student can send a "data subject access request" to an AdTech firm (e.g., Google) to request the data that the AdTech firm possesses about her. Alternatively, a student could request the AdTech firm's data in any other way (e.g., Google allows users to download their data via the [Google Takeout](#) service).

Requirements

- High interest in the topic
- Willingness to collect and analyse data (6-month access to [DataCamp](#) tutorials will be provided)
- Experience with statistical software (preferably R or Python, STATA, Excel)

Language

English

Literature

Kaltheuner, F. (2018), "I Asked an Online Tracking Company for All of My Data and Here's What I Found", Privacy International, <https://privacyinternational.org/long-read/2433/i-asked-online-tracking-company-all-my-data-and-heres-what-i-found>. (accessed 24/08/2022).

Sluis, S. (2021), "How Hot Is Ad Tech? According To LUMA, It's Raining Billion-Dollar Transactions", AdExchanger, <https://www.adexchanger.com/platforms/how-hot-is-ad-tech-according-to-luma-its-raining-billion-dollar-transactions/>. (accessed 24/08/2022).

Urban, T., Tatang, D., Degeling, M., Holz, T. & Pohlmann N. (2019), "A Study on Subject Data Access in Online Advertising After the GDPR", in Data Privacy Management, Cryptocurrencies and Blockchain Technology, Springer, 61–79. https://doi.org/10.1007/978-3-030-31500-9_5.

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Measuring the “Cookieless Future”

Overview

Third-party (3p) cookies are one of the most popular ways to track users online (Skiera, 2022). In January 2020, Google announced it would "phase out" 3p cookies in the Chrome browser by 2024 (Chavez, 2022). Google's move to increase users' privacy will likely have significant consequences for users, advertisers, publishers, and other "third parties" in the AdTech ecosystem relying on 3p cookies to track users online. However, 3p cookies are not the only way to track users online. For example, first-party (1p) cookies and fingerprinting are alternatives to 3p cookies for tracking users online (Stewart, 2022).

This thesis aims to measure the "cookieless future", i.e., "...a shift in the digital landscape following Google's planned phasing out of third-party cookies" (Stewart, 2022). The student should provide (descriptive) evidence of whether the change from 3p to, e.g., 1p cookies and/or fingerprinting is happening. The student could, e.g., use the [Tracker Radar](#) data set to fulfill this thesis's aim.

Requirements

- High interest in the topic
- Willingness to collect and analyse data (6-month access to [DataCamp](#) tutorials will be provided)
- Experience with statistical software (preferably R or Python, STATA, Excel)

Language

English

Literature

Chavez, A. (2022), "Expanding testing for the Privacy Sandbox for the Web", *Product Updates*, <https://blog.google/products/chrome/update-testing-privacy-sandbox-web/>. (accessed 23/09/2022).

Skiera, B., Miller, K., Jin, Y., Kraft, L. Laub, R. & Schmitt, J. (2022), The Impact of the General Data Protection Regulation (GDPR) on the Online Advertising Market, Self-Published, <https://www.gdpr-impact.com>.

Stewart, H. (2022), "The Cookieless Future: Why Are Cookies Going Away?", *Learn Hub*, <https://learn.g2.com/cookieless-future>. (accessed 23/09/2022).

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Assessing the Potential of Differentially Private Machine Learning Algorithms for Marketing

Overview

Machine learning models aim to generalize the available information from a set of input data. However, sometimes it is possible to recover information about individuals from a trained model. This may lead to privacy risks for consumers who are part of an input dataset. To prevent such shortcomings, a growing stream of literature develops machine learning algorithms that apply the concept of differential privacy. Many differentially private algorithms are available via the GitHub repository TensorFlow Privacy (<https://github.com/tensorflow/privacy>).

This thesis aims to assess the potential of differentially private machine learning algorithms for marketing, for instance, in the context of targeting or personalization. One possible way to reach the aim is to apply a differentially private machine learning algorithm and compare it to a regular machine learning model without privacy guarantees. The results of the comparison of both models could be used as a starting point for discussing potential advantages and disadvantages for marketers and consumers. One possible source to find appropriate datasets is the data repository of Kaggle (<https://www.kaggle.com/>).

Requirements

- Willingness to acquire a deeper understanding of complex and technical algorithms
- Willingness to code in Python
- Interest in machine learning

Language

German or English

Literature

Clemente, F. (2020), "Private ML with Tensorflow Privacy", <https://medium.com/ydata-ai/private-ml-with-tensorflow-privacy-9122f3340a9b> (retrieved 01/08/2022).

Desfontaines, D. (2022), "A Friendly, Non-technical Introduction to Differential Privacy", <https://desfontain.es/privacy/friendly-intro-to-differential-privacy.html> (retrieved 01/08/2022).

Dwork, C. (2008), "Differential Privacy: A Survey of Results", In Theory and Applications of Models of Computation, 1-19, https://doi.org/10.1007/978-3-540-79228-4_1.

Schneider, M., Jagpal, S., Gupta, S., Li, S., Yu, Y. (2017), "Protecting Customer Privacy When Marketing with Second-Party Data", International Journal of Research in Marketing, 34(3), 593-603.

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Hidden Champions der digitalen Medienindustrie in Deutschland

Überblick

In der Medienlandschaft gibt es viel Bewegung, welche durch diverse Einflüsse, wie die Auswirkungen der Pandemie, striktere Privatsphäre-Regulierungen oder den Rückgang der Print-Auflagen, getrieben werden. So geraten die Geschäftsmodelle der Medien seit mehreren Jahren unter Druck. Geht es um die Innovativität und den wirtschaftlichen Erfolg in der Medienindustrie wird oftmals die amerikanische Zeitung "The New York Times" als Vorreiter genannt. Auch in Deutschland gibt es sicherlich innovative, digitale Medienangebote, welche erfolgreich agieren.

Die Bachelorarbeit soll sich mit dem Thema beschäftigen, welche Medienangebote sich trotz des dynamischen Marktumfelds in den letzten Jahren im deutschen Markt erfolgreich behaupten konnten. Zur Beantwortung der Frage könnten beispielsweise Datensätze zur Reichweite der digitalen Medien (z.B. von AGOF oder IVW) analysiert werden, um die Marktanteile über die Zeit zu messen und erfolgreiche Angebote herauszufiltern. Überdies könnten Sekundärquellen wie Branchenberichte oder Zeitungsartikel sowie eine eigene Analyse der Geschäftsmodelle dazu dienen, festzustellen, welche strategische Ausrichtung zum Erfolg geführt hat.

Voraussetzungen

- Großes Interesse am Thema
- Kenntnisse in Excel oder R zur Datenauswertung
- Strukturierte Arbeitsweise zur Beantwortung eines breiten Themas

Sprache

Deutsch

Literatur

Keller, D., Eggert, C. (2022), "Zur wirtschaftlichen Lage der deutschen Zeitungen", https://www.bdzv.de/fileadmin/content/7_Alle_Themen/Marktdaten/2022/Branchenbeitrag_2022/BZDV_Branchenbeitrag2022_v2.pdf (aufgerufen am 02/08/2022).

Lambrecht, A., Goldfarb, A., Bonatti, A., Ghose, A., Goldstein, D.G., Lewis, R., Rao, A., Sahni, N., Yao, S. (2022), "How do firms make money selling digital goods online?", Marketing Letters, 25, 331-341.

Pattabhiramaiah, A., Sriram, S., Manchanda, P. (2019), "Paywalls: Monetizing Online Content", Journal of Marketing, 83(2), 19-36.

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Verfügbarkeit Betreuung: WS 2022/2023



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Analyse der Datensammlung bei trackingfreien PUR-Abos

Überblick

Eine wachsende Anzahl an digitalen Zeitungen und Verlagen implementiert das sogenannte PUR-Abo anstelle eines Cookie-Banners. Dabei können sich Nutzer entscheiden, die Inhalte einer Webseite entweder (i) gegen Bezahlung oder (ii) kostenlos, aber dafür mit Tracking und Cookies aufzurufen. Zeitungsberichte weisen allerdings darauf hin, dass trotz der Wahl der trackingfreien Bezahlalternative weiterhin Daten über die Nutzer gesammelt werden.

Die Bachelorarbeit soll sich mit dieser These beschäftigen und untersuchen, welche Daten über Nutzer nach Abschluss eines PUR-Abos gesammelt werden. Zur Beantwortung der Frage könnte beispielsweise die in den Zeitungsartikeln (siehe Eberl 2020, 2022) dargelegte Vorgehensweise auf eine größere Zahl an Webseiten übertragen werden. Überdies könnte die Analyse um einen Vergleich mit dem Tracking bei Webseiten ohne PUR-Abo erweitert werden.

Die Ergebnisse der Arbeit tragen dazu bei, die Ausgestaltung und das Design von PUR-Abos, welche zunehmend an Relevanz gewinnen, besser zu verstehen.

Voraussetzungen

- Großes Interesse am Thema
- Bereitschaft zur Einarbeitung in die Funktionsweise von Webtracking-Technologien
- Kenntnisse in Webprogrammierung (nicht notwendig, aber hilfreich)

Sprache

Deutsch

Literatur

Eberl, M. (2020), "Pur-Abos im Test: Nicht ganz ohne", <https://netzpolitik.org/2020/nicht-ganz-ohne/> (aufgerufen am 22/09/2022).

Eberl, M. (2022), "Über die Unreinheit der Pur-Abos", <https://medieninsider.com/pur-abo-zeit-rheinische-post-sachsische/12337/> (aufgerufen am 22/09/2022).

Mayer, J. R., Mitchell, J. C. (2012), "Third-Party Web Tracking: Policy and Technology", Proceedings of the 2012 IEEE Symposium on Security and Privacy, 413-427.

Kontakt

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Verfügbarkeit Betreuung: WS 2022/2023



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Analyzing the Penalties of GDPR Violations

Overview

The General Data Protection Regulation (GDPR) is among the world's toughest privacy laws, with its upper bound of penalty up to millions of euros. Is the high penalty effective in preventing violations of the law? On the one hand, many firms have been fined an astonishing amount of money (e.g., Amazon €746 Mio, WhatsApp €225 Mio). On the other hand, 58% of firms completely ignored complaints of their unlawful behavior, betting on the low probability of getting sanctions.

What does the distribution of penalties look like? Which firms are more likely to pay penalties? How do the fines differ across countries? To answer the questions, the thesis aims to analyze the penalties of GDPR violations in more detail. The student could collect data on GDPR fines from publicly available sources (e.g., enforcementtracker), describe the fines with statistical methods, or even develop measures to estimate the expected cost of the violation. The analysis provides firms with evidence for risk assessment and helps to understand firms' incentives for violations so that regulators can adjust penalty design accordingly.

Requirements

- High interest in the topic
- Knowledge of programming skills (Python or R)

Language

English

Literature

Kamps, M., Runte, C. (2021), "GDPR Enforcement Tracker Report- 2nd Edition 2021", <https://cms.law/en/deu/publication/gdpr-enforcement-tracker-report>

Noyb (2020), "Noyb Files 422 Formal GDPR Complaints on Nerve-wrecking "Cookie Banners"", <https://noyb.eu/en/noyb-files-422-formal-gdpr-complaints-nerve-wrecking-cookie-banners>

Wolff, J., Atallah, N. (2020), " Early GDPR Penalties: Analysis of Implementation and Fines Through May 2020", TPRC48: The 48th Research Conference on Communication, Information and Internet Policy, available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3748837

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Analyzing User Decision Cost on Consent Banner under Privacy Regulations

Overview

Most privacy regulations require firms to obtain user consent before collecting personal data. Despite the enormous efforts devoted to designing and running consent banners, users still find the banners bringing more annoyance than privacy protection. Hypothetically, if a user were to make all possible decisions regarding data processing on a website, she would spend 31.65 minutes per website. Firms and regulators are trying to reduce user decision costs, such as allowing browsers to manage user consent collectively. But before making any attempt to improve the ways to collect user consent, they need a better estimate of user decision cost and a better understanding of user preferences for consent banners, which hasn't been paid much attention to so far.

The thesis aims to analyze user decision cost of giving consent. The student could design survey and investigate questions like how much time/effort a user spent making decisions on consent banners under certain cases (e.g., news website or game APP), whether/when a user would make what kind of choices on the consent banners, which consent banner/tool is most likely to elicit a users' desired privacy preference, etc.

Requirements

- High interest in the topic
- Willingness and ability to design and conduct surveys

Language

English (Questionnaires can be in German)

Literature

Brough, A. R., Norton, D. A., Sciarappa, S. L., John, L.K. (2020), "The Bulletproof Glass Effect: Unintended Consequences of Privacy Notices", *Journal of Marketing Research*, 59(4), 739–754

Chang, Y., Wong, S., Libaque-Saenz, F., Lee, H. (2018), "The Role of Privacy Policy on Consumers' Perceived Privacy", *Government Information Quarterly*, 35(3), 445-459

Kulyk, O., Gerber, N., Hilt, A., Volkamer, M. (2020), "Has the GDPR Hype Affected Users' Reaction to Cookie Disclaimers?", *Journal of Cybersecurity*, 6(1), tyaa022

Skiera, B., Miller, K., Jin, Y., Kraft, L., Laub, R., Schmitt, J. (2022), "The Impact of the GDPR on the Online Advertising Market", www.gdpr-impact.com

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What do Most Consumers Care about When Discussing Privacy?

Overview

Previous literature has revealed a notable discrepancy between what privacy policies of firms (e.g., privacy & terms in an App) state and what consumers care about most. For example, most consumers wonder whether their data is transferred to other firms, while firms spend the most space emphasizing the security of data storage. When there is such a mismatch in communication, firms lose consumers due to privacy concerns and insufficient trust. Several recent events (e.g., new privacy laws, COVID-19) have sparked a growing volume of privacy discussion on public/social media, which provides consumers a way to reveal more detailed information on their demand for privacy.

The thesis aims to investigate: what are the keywords/topics that most consumers praise/complain about privacy? One way to answer the questions is to collect textual data such as news or tweets, and adopt statistical methods that the student thinks are suitable (e.g., descriptive statistics). The investigation helps firms improve privacy notices more to-the-point, and helps regulators draft laws and instructions that more accurately suit consumer demand.

Requirements

- High interest in the topic
- Knowledge of programming skills (Python or R)

Language

English

Literature

Bhatt, P., Vemprala, N., Valecha, R., Hariharan, G., Rao, H. R. (2022), "User Privacy, Surveillance and Public Health during COVID-19 – An Examination of Twitterverse", *Information Systems Frontiers*, 1–16

Bleier, A., Goldfarb, A., Tucker, C. (2020), "Consumer Privacy and the Future of Data-based Innovation and Marketing", *International Journal of Research in Marketing*, 37(3), 466–480

Earp, J. B., Anton, A. I., Aiman-Smith, L., & Stufflebeam, W. H. (2005), "Examining Internet Privacy Policies within the Context of User Privacy Values", *IEEE Transactions on Engineering Management*, 52(2), 227–237.

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Identifying Product Relationships in the Video Game Industry

Overview

Understanding which products are similar or different in a market is key for many marketing activities. In some product categories, such similarities can be hard to identify. One example is games: Even if two games appear very similar (e.g., are within the same genre), a player could like one but not the other. Similarly, the player could also like another game that appears very different (e.g., comes from a different genre).

The aim of this thesis is to identify co-purchase relationships in the video game industry. That is, given a focal game, the student should identify which other games consumers might like. One way to do so is measuring product similarity among video games using publicly available data from the "Steam" platform. There, the student could identify co-purchases of different games from public profiles and derive a measure of product similarity. Based on the derived similarity measures, the student should provide game developers with recommendations for cross-selling or targeting.

Requirements

- High motivation and interest in the topic
- Mandatory: Experience with a statistical programming language (such as R or Python)
- Experience with (or willingness to learn) API requests

Language

Deutsch / Englisch

Literature

Max Wei, Y. (2020), "The similarity network of motion pictures.", *Management Science*, 66(4), 1647-1671.

Netzer, O. / Feldman, R. / Goldenberg, J. / Fresko, M. (2012), "Mine your own business: Market-structure surveillance through text mining.", *Marketing Science*, 31(3), 521-543.

Ringel, D. M. / Skiera, B. (2016), "Visualizing asymmetric competition among more than 1,000 products using big search data.", *Marketing Science*, 35(3), 511-534.

Kontakt

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Supervision availability: until February 2023



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Mining Brand Associations from Related Google Searches

Overview

Building a successful brand involves creating the right associations with your brand's name in consumers' minds. To do so, managers regularly need to monitor the current brand associations (and intervene if necessary). However, the standard way to measure brand associations – surveys – can quickly become costly.

Thus, the aim of this thesis is to apply and validate a low-cost alternative: Related Google searches. Consumers often search for a brand's name with some additional context on Google. These additional terms could insights into what consumers currently associate with a brand. To test this idea empirically, the student should collect data on related Google searches from an SEO data provider (Sistrix) for a large number of brands. (S)he should then identify which brands have common or different associations and contrast the findings with extant data on brand similarity.

Requirements

- High motivation and interest in the topic
- Preferred: Experience with a statistical programming language (such as R or Python)

Language

Deutsch / Englisch

Literature

Culotta, A., & Cutler, J. (2016), "Mining brand perceptions from twitter social networks.", Marketing Science, 35(3), 343-362.

Netzer, O. / Feldman, R. / Goldenberg, J. / Fresko, M. (2012), "Mine your own business: Market-structure surveillance through text mining.", Marketing Science, 31(3), 521-543.

Dzyabura, D. / Peres, R. (2021), "Visual elicitation of brand perception." Journal of Marketing, 85(4), 44-66.

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(How) did News Consumption change during Covid-19?

Overview

Consuming news is an everyday activity for large parts of the population. During the Covid-19 pandemic, many activities in consumers' everyday life have changed. Examples of such activities include shopping groceries, watching media, or spending leisure time. Thus, it might be possible that the way how people consume news has changed as well.

The aim of this thesis is to explore empirically if (and how) news consumption changed during Covid-19. One approach to do so would be to investigate datasets provided by AGOF. These data entail different publishers of news media and capture a) how many consumers visit their websites (i.e., publishers' market shares), and b) which publishers the same consumers visit (i.e., publishers' similarities). Using these data, the student could compare market shares and similarities before and after the Covid-19 pandemic and identify corresponding changes.

Requirements

- High motivation and interest in the topic
- Preferred: Experience with a statistical programming language (such as R or Python)

Language

Deutsch / Englisch

Literature

DeSarbo, W. S. / Grewal, R. / Wind, J. (2006), "Who Competes with Whom? A Demand-Based Perspective for Identifying and Representing Asymmetric Competition.", *Strategic Management Journal*, 27(2), 101-129. *MIS Quarterly*, 42 (3), 805-829.

Netzer, O. / Feldman, R. / Goldenberg, J. / Fresko, M. (2012), "Mine Your Own Business: Market-Structure Surveillance through Text Mining.", *Marketing Science*, 31(3), 521-543.

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Study a Marketing Topic of Interest with Twitter Data

Overview

An increasing number of marketing research papers draw on Twitter data (e.g., Lacka et al. 2021, Malhotra and Bhattacharyya 2022, Rust et al. 2021). Unstructured data from Twitter has been used in many ways, be it to determine the sentiment around brand interactions, follower networks or to study the link between actions on Twitter and financial outcomes. Twitter data has the advantage that one can access the data relatively easily through the platform's API.

Your task is to define and investigate a marketing topic of your interest with Twitter data (e.g., posts, follower networks, user metadata).

Before starting your thesis, you will need to outline (1) why the topic you want to investigate is important, (2) how Twitter data can be used to investigate the topic, and (3) how your study contributes to the extant related research.

Requirements

- Some prior knowledge of working with unstructured data is recommended
- Good problem solving skills and ability to structure a research topic “end-to-end” (with directional support from your advisor)

Language

German / English

Literature

Lacka, E., Boyd, D. E., Ibikunle, G., & Kannan, P. K. (2022), Measuring the Real-Time Stock Market Impact of Firm-Generated Content. *Journal of Marketing*, 86(5), 58–78.
<https://doi.org/10.1177/00222429211042848>

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<https://developer.twitter.com/en/docs/twitter-api>

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A Matter of Taste – A Data Science Approach to Wine

Overview

(Online) reviews and ratings are increasingly important factors driving consumer decisions (Chevalier and Mayzlin 2006). Especially in areas where quality is hard to determine before consumption, ratings help infer quality assessments and drive purchase decisions. For instance, in the wine industry, positive reviews have been found to boost sales by up to 6% in the short run (Friberg and Grönqvist 2012), underlining the economic importance of such reviews.

Kaggle offers a dataset of 130.000 wine reviews that also includes a rating on a numerical scale (0-100). Your thesis could analyze the data from the consumer and producer perspective. So, you need to specify the precise aim that your thesis should pursue. It could involve questions such as (1) which wines and attributes maximize the value consumers can extract and (2) which wine experts producers should target to have their wines rated. Your analysis could help consumers gain more value from their wine purchases and help producers assess which wine experts are best suited to rate their wines.

Requirements

- Data wrangling skills
- Initial knowledge of working with statistical software, such as R, Python or SPSS

Language

German / English

Literature

Chevalier, J. A., & Mayzlin, D. (2006), The Effect of Word of Mouth on Sales: Online Book Reviews. *Journal of Marketing Research*, 43(3), 345–354. <https://doi.org/10.1509/jmkr.43.3.345>

Friberg, R., & Grönqvist, E. (2012), Do Expert Reviews Affect the Demand for Wine? *American Economic Journal: Applied Economics*, 4(1), 193–211. <https://doi.org/10.1257/app.4.1.193>

Kotonya, N., Cristofaro, P. D., & Cristofaro, E. D. (2018), Of Wines and Reviews: Measuring and Modeling the Vivino Wine Social Network [Proceedings paper]. In: 2018 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM). (Pp. Pp. 387-392). IEEE (2018); IEEE. <https://doi.org/10.1109/ASONAM.2018.8508776>

Thoutt, Z. (2017), Wine Reviews — WineMag. Kaggle. <https://www.kaggle.com/datasets/zynicide/wine-reviews>

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Do Customers Care About Ingredients in Cosmetics?

Overview

The cosmetics industry is giving customers the impression that it is “greening up” (Sahota 2014). The industry invests heavily into its image, with close to 8 bn \$ (Guttmann 2021) spent yearly on advertising, with green credentials playing an important role.

However, are less questionable product ingredients more appreciated by customers, and how well do marketing claims (product descriptions) align to product ingredients?

Your goal is to find an answer to these questions by studying a dataset of more than 9000 products extracted from Sephora (dataset published on Kaggle), a large cosmetics retailer in the US. The dataset contains product ratings, product descriptions, and product ingredients. As part of your thesis, you will analyze whether less questionable product ingredients are associated with better customer ratings. Further analyses should focus on the appropriateness of product descriptions when compared to the actual product ingredients.

Requirements

- Data wrangling skills
- Initial knowledge of working with statistical software, such as R, Python or SPSS

Language

German / English

Literature

Lin, Y.-C., & Chang, C. A. (2012), Double Standard: The Role of Environmental Consciousness in Green Product Usage. *Journal of Marketing*, 76(5), 125–134. <https://doi.org/10.1509/jm.11.0264>

Olsen, M. C., Slotegraaf, R. J., & Chandukala, S. R. (2014), Green Claims and Message Frames: How Green New Products Change Brand Attitude. *Journal of Marketing*, 78(5), 119–137. <https://doi.org/10.1509/jm.13.0387>

Raghad, A. (2020), Sephora Product Descriptions. Kaggle. <https://www.kaggle.com/datasets/raghadalharbi/all-products-available-on-sephora-website>

Sahota, A. (2014), Sustainability: How the Cosmetics Industry is Greening Up. John Wiley & Sons.

Silge, J., & Robinson, D. (2017), Text Mining with R: A Tidy Approach (1st ed.). O'Reilly Media.

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Language Models in Marketing: Are Humans or AI Better Copywriters for E-Commerce?

Overview

Open AI's GPT-3 is a powerful language model that generates authentic text based on user-provided prompts. GPT-3 can write a coherent product description from a product's title — or authentic-sounding reviews based on the product description (just let the model know if it should be excellent or very poor). This thesis aims to determine who can write better texts for e-commerce: humans or state-of-the-art language models such as GPT-3?

We will provide you with a real-world e-commerce product data set. Your task is to generate authentic content (e.g., product titles, descriptions, reviews) with OpenAI's GPT-3. Then, the thesis could evaluate the AI-generated content and benchmark it against the "true" seller- or user-generated content.

Requirements

- Programming skills in a statistical language such as R (preferred), Python, Stata
- Basic econometric knowledge

Language

English

Literature

Johnson, S. (2022), "A.I. Is Mastering Language. Should We Trust What It Says?" The New York Times Magazine, <https://www.nytimes.com/2022/04/15/magazine/ai-language.html>, accessed August 15th, 2022.

Payne, M. (2021), "Ecommerce Product Taxonomy & Categorization with GPT-3," Width.ai, <https://www.width.ai/post/product-taxonomy-product-categorization>, accessed August 15th, 2022.

Reisenbichler, M., Reutterer, T., Schweidel, D. A., & Dan, D. (2022), "Frontiers: Supporting Content Marketing with Natural Language Generation". Marketing Science, 41 (3): 441–452. <https://doi.org/10.1287/mksc.2022.1354>

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The Digital Markets Act's Potential Impact on E-Commerce

Overview

On July 5th, the European Parliament ratified the *Digital Markets Act* (DMA). After ratification by the Council of the European Union, the DMA will most likely become law at the end of 2022.

The DMA aims to “make the digital sector fairer and contestable” (European Commission, 2022) by regulating market-dominating online platforms (“gatekeepers”). While the regulation is ambitious in scope, questions remain about implementing and enforcing the new regulation.

This thesis aims to discuss the potential impact of the Digital Markets Act on e-commerce platforms and consumers. Potential dimensions for the analysis can be **competition** (e.g., how the DMA enables new business models or how it “levels the playing field” for competitors?) and **fairness** (e.g., how does the DMA affect ensure fair platform designs and competition?). Finally, the thesis should recommend how regulators and researchers can measure DMA compliance.

Requirements

- Interest in the interface of Economics, Law, and Marketing
- Conceptual thinking and creativeness to evaluate a yet-to-be-implemented regulation

Language

English

Literature

De Streel, A., Scott Morton, F., Crémer, J., Fletcher, A., Heidhues, P., Monti, G., Podszun, R., Schnitzer, M. (2022), “How Europe Can Enforce the Digital Markets Act Effectively,” Pro Market, <https://www.promarket.org/2022/05/11/europe-digital-markets-act-effective-enforcement/>, accessed August 15th, 2022.

European Commission (2022), “Digital Markets Act (DMA),” https://ec.europa.eu/competition-policy/sectors/ict/dma_en, accessed July 14th, 2022.

Satariano, A. (2022), “E.U. Takes Aim at Big Tech's Power With Landmark Digital Act,” The New York Times, <https://www.nytimes.com/2022/03/24/technology/eu-regulation-apple-meta-google.html>, accessed August 15th, 2022.

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Definitions and Implications of (Un-)Fairness on Digital Platforms

Overview

Fair competition on platforms is a priority for lawmakers. In the European Union, the newly enacted Digital Markets Act aims to end “unfair practices of big online platforms” (European Parliament, 2021). However, it is often unclear 1) how to define fairness in the context of digital platforms and 2) which practice of a digital platform then constitutes an “unfair” practice according to such definition. This thesis aims to compare established fairness standards from the (algorithmic) fairness literature and evaluate which of them researchers and regulators should apply. To that end, the thesis should comprehensively discuss examples of potentially unfair platform practices and then propose suitable fairness standards to evaluate those. Additionally, the thesis should include a critical discussion of “unfair” practices’ implications on platform actors such as consumers and third-party businesses.

Requirements

- Interest in the interface of Marketing, Economics, Law, and Information Systems
- Intermediate skills in statistics to understand and evaluate statistical fairness standards
- Conceptual thinking

Language

English

Literature

European Parliament (2021), Digital Markets Act: Ending Unfair Practices of Big Online Platforms. Press Release. <https://www.europarl.europa.eu/news/en/press-room/20211118IPR17636/digital-markets-act-ending-unfair-practices-of-big-online-platforms>, accessed September 29th, 2022.

European Parliament (2019), Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on Promoting Fairness and Transparency for Business Users of Online Intermediation Services, <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019R1150> (accessed September 29th, 2022).

Hurlin, C., Pérignon, C., Saurin, S. (2022), The Fairness of Credit Scoring Models. HEC Paris Research Paper No. FIN-2021-1411, <https://ssrn.com/abstract=3785882>.

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User Perceptions of Tracking

Overview

User tracking is essential for the mobile advertising industry because it improves advertisers' targeting and measurement ability and, thus, publishers' ad revenue. Tracking seems to be also crucial for users because it raises their privacy concerns. However, many users do not act according to their stated intentions (i.e., they state that privacy is important but do little to avoid tracking). If such inconsistencies arise because of privacy illiteracy (e.g., users do not know how to prevent tracking), then regulators should educate users about online privacy to help consumers prevent tracking. If, however, these inconsistencies arise because users expect little utility from preventing tracking, then the economic value of tracking might be higher than users' utility decrease, questioning regulatory approaches to increase privacy. This thesis will examine users' perception of tracking to shed light on the reasons for the inconsistencies outlined above via an empirical study based on a survey the author will have to conduct.

Requirements

- High interest into online tracking and the online advertising industry
- Willingness to design and conduct a survey
- Strong ability to work empirically

Language

German / English

Literature

Auxier, B., Rainie, L., Anderson, M., Perrin, A., Kumar, M.m and Turner, E. (2019), "Americans and Privacy: Concerned, Confused and Feeling Lack of Control Over Their Personal Information," Report, PEW Research Center.

Kokolakis, S. (2017), "Privacy Attitudes and Privacy Behaviour: A Review of Current Research on the Privacy Paradox Phenomenon," *Computers & Security*, 64, 122-34.

Johnson, G. A., Shriver, S. K., and Du, S. (2020), "Consumer Privacy Choice in Online Advertising: Who Optes Out and at What Cost to Industry?," *Marketing Science*, 39 (1), 33–51.

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Potential of Data Clean Rooms for the Online Advertising Industry

Overview

Recent regulations (e.g., General Data Protection Regulation, fade-out of third-party cookies) led firms in the online advertising industry to think about how to share data in a privacy-preserving manner. A „Data Clean Room“ (DCR) represents one potential approach. Specifically, a DCR is a space where two firms can securely share and analyze data with complete control of how, where, and when that data can be used. So far, however, the benefits and drawbacks of DCRs for firms in the online advertising industry are unclear, questioning the potential of DCRs for them. This thesis will try to find an answer to this question. A possible starting point of the thesis could be to outline the problem(s) DCRs can solve and present current applications of DCRs in online advertising to identify strengths and weaknesses.

Requirements

- High interest in online advertising markets
- Willingness to understand a novel technology in great detail
- Microeconomic skills to develop an analytical model of data sharing and analysis

Language

German / English

Literature

AppsFlyer (2022), "It's Time to Come Clean – The Complete Data Clean Rooms Guide", (accessed at September 23, 2022), [available at <https://www.appsflyer.com/resources/guides/data-clean-rooms/>].

Herbrich, T. (2022), "Data Clean Rooms", Computer Law Review International, 23 (4), 109-20. <https://doi.org/10.9785/cr-2022-230404>

IAB Europe (2022), "A Guide to the Post Third-Party Cookie Era", (accessed September 23, 2022), [available at https://iabeurope.eu/wp-content/uploads/2022/03/IAB-Europe-Guide-to-a-Post-Third-Party-Cookie-Era_March-2022.pptx.pdf].

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Gender and Age Differences in Mobile User Tracking

Overview

User tracking is essential for the mobile advertising industry because it improves advertisers' targeting and measurement ability and, thus, publishers' ad revenue. Yet, it is unclear which users are trackable (e.g., are females between 25 and 34 years less likely to be tracked?). This lack of knowledge prevents advertisers from understanding which users they cannot reach with targeting approaches that build upon tracking (e.g., females between 25 and 34 years). As such, advertisers don't know whether they should rely on alternative targeting strategies to reach specific users (e.g., displaying ads on apps that attract many females between 25 and 34 years). Similarly, publishers cannot assess which content they should provide to attract trackable users and increase their ad revenue. The thesis's author will receive access to proprietary data in the mobile advertising market to examine the determinants of user tracking in an empirical study. A potential starting point of the thesis would be to describe the importance of user tracking and its determinants for the mobile advertising industry. The thesis must include an empirical analysis of users' age and gender impact on user tracking.

Requirements

- High interest in the mobile advertising industry
- High interest in understanding tracking technologies
- Strong ability to work empirically

Language

German / English

Literature

Kesler, R. (2022), "The Impact of Apple's App Tracking Transparency on App Monetization," Working Paper, <http://dx.doi.org/10.2139/ssrn.4090786>.

Kollnig, K., Shuba, A., Van Kleek, M., Binns, R., and Shadbolt, N. (2022), "Goodbye Tracking? Impact of iOS App Tracking Transparency and Privacy Labels," FAccT '22: 2022 ACM Conference on Fairness, Accountability, and Transparency, 508–20, <https://doi.org/10.1145/3531146.3533116>.

Seufert, E. (2021), "The End of the Beginning on Mobile: ATT is Enforced Next Week", (accessed September 28, 2022), [available at <https://mobiledevmemo.com/the-end-of-the-beginning-on-mobile-att-is-enforced-next-week/>].

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Measurability of Privacy Risks in ESG Scores

Overview

Rating agencies developed environmental, social, and governmental scores (i.e., ESG scores) to help investors evaluate the risks of investing in a company. Recent regulations to improve privacy (e.g., European GDPR) have put new obligations on companies that process consumer data (e.g., the obligation of using a legal basis). These new obligations constitute a new investment risk because companies may need to pay substantial fees if they get sued because they are incompliant. However, it is unclear how ESG scores could include these privacy risks. Thus, there is a need (i) to develop a method that makes these new risks measurable, (ii) to integrate the measurement into the ESG scores, (iii) to apply this method by measuring these risks for companies, and (iv) to validate the measurement in an empirical study (e.g., comparing companies' privacy risks and GDPR fines).

Requirements

- High interest in the technical, economic, and legal perspectives of digital companies
- High interest in the world of finance and investment
- Willingness to work conceptually and empirically

Language

German / English

Literature

Dorfleitner, G., Halbritter, G., and Nguyen, M. (2015), "Measuring the Level and Risk of Corporate Responsibility—An Empirical Comparison of Different ESG Rating Approaches," *Journal of Asset Management* 16 (7), 450-66.

Gunnar, F., Busch, T., and Bassen, A. (2015), "ESG and Financial Performance: Aggregated Evidence from More than 2000 Empirical Studies," *Journal of Sustainable Finance & Investment* 5 (4), 210-33.

NOYB – European Center for Digital Rights (2021), "GDPRhub," (accessed June 3, 2022), [available at https://gdprhub.eu/index.php?title=Welcome_to_GDPRhub].

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