Dr. David Harborth – Curriculum Vitae

Postdoctoral Researcher
Chair of Mobile Business and Multilateral Security (Chairholder: Prof. Dr. Kai Rannenberg)
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RESEARCH INTERESTS

- User perceptions and concerns related to immersive systems and technology acceptance research, especially Augmented Reality (AR) (publication of 12 competitively peer-reviewed conference and journal articles, partially topic of my PhD)

- Investigation of informational self-determination of individuals through privacy-enhancing technologies (PETs) and user adoption (publication of six competitively peer-reviewed conference and journal articles, sub-project lead of the BMBF project "AN.ON-Next")

- Privacy of individuals in the digital sphere, including analyses of privacy concerns and their ramifications with regard to technology use (publication of three competitively peer-reviewed conference and journal articles besides my research on AR and PETs)

- Artificial Intelligence (AI) and Intelligence Augmentation (IA) and possible effects on the work life (journal publication accepted which analyzes the potential of AR and VR as means for augmenting human intelligence)

EMPLOYMENT

From 07/2021	Goethe University Frankfurt, Frankfurt am Main, Germany Chair of Mobile Business & Multilateral Security *Postdoctoral researcher*

- Management of individual research projects (e.g., on individual autonomy related to augmented reality technologies or contact-tracing apps)
- Holding an own lecture series on quantitative and qualitative research methods in information systems and HCI for Master students
- Assistance in proposal writing for calls of the Horizon Europe Framework program and the German Federal Ministry of Education and Research

12/2015 – 07/2021	Goethe University Frankfurt, Frankfurt am Main, Germany Chair of Mobile Business & Multilateral Security *Research and teaching assistant*

- Research on multiple projects in information systems and computer science funded by the EU and the BMBF
- Supervision of over 25 seminars, bachelor and master theses
- Responsible for the teaching administration for the research group
- Responsible for the organization of the teaching activities of the department of business informatics for the winter term 2021/2022 and the summer term 2022

| 01/2020 – 03/2020 | International Computer Science Institute (ICSI) and Berkeley Laboratory for Usable and Experimental Security (BLUES) at UC Berkeley, Berkeley, US (https://blues.cs.berkeley.edu/people/david_harborth/) *Visiting researcher* |

- Research on privacy in mobile augmented reality applications
- Collaboration on multiple projects related to usable security and privacy (e.g., related to always-on listening devices)

| 10/2015 – 11/2015 | KPMG AG Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, Germany *Senior Associate, Financial Services, Regulatory* |

- Analysis of financial regulations and implications on financial institutions
- Independent realization of consulting projects (including documentation)
- Performance of process and data analyses

| 12/2013 – 09/2015 | KPMG AG Wirtschaftsprüfungsgesellschaft, Frankfurt am Main, Germany *Working student, Advisory, Financial Services, Regulatory and Compliance* |

- Development and maintenance of KPMG-LexLinks (platform to link national, European and international regulations)

EDUCATION

12/2015 – 07/2021	Goethe University Frankfurt, Frankfurt am Main, Germany *Dr. rer. pol. (equivalent to PhD in Economics)* Thesis title: "Analyzing End User Privacy Concerns and Threats in the Context of Mobile Augmented Reality Technologies" Grade: summa cum laude
10/2013 – 09/2015	Goethe University Frankfurt, Frankfurt am Main, Germany *Master of Science in Management with specialization in Finance and Information Management* Grade: 1.7
10/2010 – 09/2013	Goethe University Frankfurt, Frankfurt am Main, Germany *Bachelor of Science in Economics and Business Administration with specialization Finance and Accounting* Grade: 1.9

RESEARCH GRANTS

09/2020	Research grant to investigate acceptance factors of the Corona-Warn-App in Germany (5,000€) Goethe-Corona-Fonds, Goethe University Frankfurt
03/2020	Research grant for user studies on Augmented Reality and Privacy within the funding program "Data rights, shared value, and re-defining 'privacy' and 'security' with AI/ML and emerging technologies" (7,500$) Center for Long-Term Cybersecurity (UC Berkeley)
12/2019	Financial support for the research visit at the International Computer Science Institute (ICSI) (3,500€) German Academic Exchange Service (Deutscher Akademischer Austauschdienst (DAAD))
01/2019	Financial support for presenting at the 52nd Hawaii International Conference on System Sciences (HICSS) (1,200€) Freunde und Förderer (Goethe University Frankfurt)
01/2019	Financial support for presenting at the 52nd Hawaii International Conference on System Sciences (HICSS) (1,000€) Forschungstopf (Goethe University Frankfurt)

06/2018	Financial support for presenting at the 26th European Conference on Information Systems (ECIS) (910€) Forschungstopf (Goethe University Frankfurt)
10/2016	Financial support for conducting a large-scale user study on the Augmented Reality application Pokémon Go (3,100€) Forschungstopf (Goethe University Frankfurt)

PARTICIPATION IN FUNDED RESEARCH PROJECTS

09/2020 – dato	"A Technical and Socio-Economic Analysis of the Corona-Warn-App in Germany with respect to Privacy" Funded by the Goethe-Corona-Fonds of the Goethe University Frankfurt *Project Lead*
01/2016 – 06/2019	"Anonymität Online der nächsten Generation (AN.ON-Next)" (Anonymity online of the next generation) Funded by the German Federal Ministry of Education and Research (BMBF) *Sub-Project Lead*
02/2016 – 12/2016	"Technology-supported Risk Estimation by Predictive Assessment of Socio-technical Security (TREsPASS)" Funded by the European Commission's Seventh Framework Program *Collaboration in Working Packages*

TEACHING RESPONSIBILITIES

Winter Term 2021	Master course: "Research Methods for Evaluating Human Aspects in Information Systems" (main instructor)
Summer Term 2021	Master course: "Privacy vs. Data: Business Models in the digital, mobile Economy" (teaching assistant)
Winter Term 2020	Master course: "Mobile Business I - Technology, Markets, Platforms, and Business Models" (teaching assistant)
Summer Term 2020	Master course: "Information and Communication Security" (teaching assistant)
Winter Term 2019	Master course: "Mobile Business I - Technology, Markets, Platforms, and Business Models" (teaching assistant)
Summer Term 2019	Master course: "Mobile Business II: Application Design, Applications, Infrastructures and Security" (teaching assistant)
Winter Term 2018	Bachelor seminar: "Technology-driven Business Model Innovation and the Role of Digital Platforms" (teaching assistant)
Winter Term 2017	Master seminar: "Research on Augmented Reality" (teaching assistant)
Summer Term 2017	Master seminar: "Augmented Reality: 'The Next Big Thing'" (teaching assistant)
Winter Term 2016	Master course: "Mobile Business I - Technology, Markets, Platforms, and Business Models" (teaching assistant)
Summer Term 2016	Master course: "Mobile Business II: Application Design, Applications, Infrastructures and Security" (teaching assistant)

REVIEWER ASSIGNMENTS

Refereed Journals	Behavior & Information Technology (BIT), Journal of Management Information Systems (JMIS), Business & Information Systems Engineering (BISE), International Journal of Technology Marketing (IJTMkt), ACM Transactions on Management Information Systems (TMIS), International Journal of Human-Computer Studies (IJHCS), Technology in Society
Conferences	International Conference on Information Systems (ICIS), European Conference on Information Systems (ECIS), Hawaii International Conference on System Sciences (HICSS), Americas Conference on Information Systems (AMCIS), Wirtschaftsinformatik (WI), GI Sicherheit, European Symposium on Research in Computer Security (ESORICS), International Conference on Information and Communications Security (ICICS), International Conference on Information Security and Privacy Protection (IFIP SEC), International Conference On Trust, Security And Privacy In Computing And Communications (TrustCom), Annual Privacy Forum (APF)

CONFERENCE AND WORKSHOP PRESENTATIONS

08/2021	USENIX Symposium on Usable Privacy and Security (SOUPS 2021) Presentation title: "Evaluating and Redefining Smartphone Permissions with Contextualized Justifications for Mobile Augmented Reality Apps" Virtual Conference
09/2020	CLTC Symposium: Data Rights, Privacy, and Security in AI Presentation title: "Evaluating and Redefining the Permissions for Mobile Augmented Reality Apps" Virtual Workshop
07/2020	20th Privacy Enhancing Technologies Symposium (PETS 2020) Presentation title: "Explaining the Technology Use Behavior of Privacy-Enhancing Technologies: The Case of Tor and JonDonym" Virtual Conference
12/2019	International Conference on Information Systems (ICIS) Presentation title: "Investigating Privacy Concerns related to Mobile Augmented Reality Applications" Munich, Germany
06/2019	International Conference on Information Security and Privacy Protection (IFIP SEC) Presentation title: "Why Do People Pay for Privacy-Enhancing Technologies? The Case of Tor and JonDonym" Lisbon, Portugal
02/2019	International Conference on Wirtschaftsinformatik (WI 2019) Presentation title: "Unfolding Concerns about Augmented Reality Technologies: A Qualitative Analysis of User Perceptions" Siegen, Germany
01/2019	Hawaii International Conference on System Sciences (HICSS) Presentation titles: "A Two-Pillar Approach to Analyze the Privacy Policies and Resource Access Behaviors of Mobile Augmented Reality Applications" and "How Privacy Concerns and Trust and Risk Beliefs Influence Users' Intentions to Use Privacy-Enhancing Technologies - The Case of Tor" Maui, US
10/2018	PET-CON 2018 Presentation title: "Requirements, Standardization and Business Models for Privacy-Enhancing Technologies" Hamburg, Germany

08/2018	Americas Conference on Information Systems (AMCIS) Presentation title: "JonDonym Users' Information Privacy Concerns" New Orleans, US
06/2018	European Conference on Information Systems (ECIS) Presentation title: "Augmented Reality – A Game Changing Technology For Manufacturing Processes?" Portsmouth, UK
10/2017	IEEE International Symposium on Mixed and Augmented Reality (ISMAR) Presentation title: "Exploring the Hype: Investigating Technology Acceptance Factors of Pokémon Go" Nantes, France
09/2017	International IFIP Summer School on Privacy and Identity Management Presentation title: "Privacy Concerns and Behavior of Pokémon Go Players in Germany" Ispra, Italy
08/2017	Americas Conference on Information Systems (AMCIS) Presentation title: "Augmented Reality in Information Systems Research: A Systematic Literature Review" Boston, US
06/2016	20. Doktoranden-Kolloquium von Simon-Kucher & Partners Presentation title: "Establishing Privacy-Enhancing Technologies (PETs) in Consumer Mass Markets" Bonn, Germany

REFEREED JOURNAL ARTICLES (9)

35. Harborth, D. and Kümpers, K. (2021). "Intelligence Augmentation: Rethinking the Future of Work by Leveraging Human Performance and Abilities", Accepted for: Virtual Reality.
[AJG 2021: -, CORE Journal Ranking: B, ABDC Journal Ranking: -,
JCR Impact Factor: 5.095]

34. Harborth, D. and Pape, S. (2021). "Investigating Privacy Concerns related to Mobile Augmented Reality Applications - A Vignette Based Online Experiment", Computers in Human Behavior, 122, pp. 1-17. DOI: https://doi.org/10.1016/j.chb.2021.106833.
[AJG 2021: 2, CORE Journal Ranking: -, ABDC Journal Ranking: A,
JCR Impact Factor: 6.829]

33. Schmitz, C., Schmid, M., Harborth, D., Pape, S. (2021). "Maturity Level Assessments of Information Security Controls: An Empirical Analysis of Practitioners' Assessment Capabilities", Computers & Security, 108, pp. 102306. DOI: https://doi.org/10.1016/j.cose.2021.102306.
[AJG 2021: -, CORE Journal Ranking: B, ABDC Journal Ranking: A,
JCR Impact Factor: 4.438]

32. Pape, S., Ivan, A., Harborth, D., Nakamura, T., Kiyomoto, S., Takasaki, H., Rannenberg, K. (2020). "Re-Evaluating Internet Users' Information Privacy Concerns: The Case in Japan", AIS Transactions on Replication Research (TRR), 6(18), DOI: https://doi.org/10.17705/1atrr.00061.
[AJG 2021: -, CORE Journal Ranking: -, ABDC Journal Ranking: -,
JCR Impact Factor: -]

31. Harborth, D. and Pape, S. (2020). "How Privacy Concerns, Trust and Risk Beliefs and Privacy Literacy Influence Users' Intentions to Use Privacy-Enhancing Technologies - The Case of Tor", ACM SIGMIS Database, 51(1), pp. 51-69, DOI: https://doi.org/10.1145/3380799.3380805.
[AJG 2021: 2, CORE Journal Ranking: B, ABDC Journal Ranking: A,
JCR Impact Factor: 1.828]

30. Harborth, D. and Kreuz, H. (2020). "Exploring the Attitude Formation Process of Individuals towards New Technologies: The Case of Augmented Reality", International Journal of Technology Marketing, 14(2), pp. 125-153, DOI: https://doi.org/10.1504/IJTMKT.2020.110128.
[AJG 2021: 1, CORE Journal Ranking: -, ABDC Journal Ranking: C,
JCR Impact Factor: -]

29.   Harborth, D. and Pape, S. (2020). "How Nostalgic Feelings Impact Pokémon Go Players -
        Integrating Childhood Brand Nostalgia into the Technology Acceptance Theory", <u>Behaviour &
        Information Technology</u>, 39(12), pp. 1276-1296,
        DOI: <u>https://doi.org/10.1080/0144929X.2019.1662486</u>.
        [AJG 2021: 2, CORE Journal Ranking: A, ABDC Journal Ranking: A,
        JCR Impact Factor: 3.086]

28.   Harborth, D. and Pape, S. (2020). "Empirically Investigating Extraneous Influences on the
        "APCO" Model – Childhood Brand Nostalgia and the Positivity Bias", <u>Future Internet</u>, 12(12), pp.
        1-16, DOI: <u>https://doi.org/10.3390/fi12120220</u>.
        [AJG 2021: -, CORE Journal Ranking: -, ABDC Journal Ranking: -,
        JCR Impact Factor: -]

27.   Harborth, D. and Pohl, M. (2017). "Standardization of 5G Mobile Networks - A Systematic
        Literature Review and Current Developments", <u>International Journal of Standardization Research
        (IJSR)</u>, 15(2), pp. 1-24, DOI: <u>https://doi.org/10.4018/IJSR.2017070101</u>.
        [AJG 2021: -, CORE Journal Ranking: C, ABDC Journal Ranking: -,
        JCR Impact Factor: -]

REFEREED CONFERENCE ARTICLES (17)

26.   Harborth, D. and Frik, A. (2021). "Evaluating and Redefining Smartphone Permissions with
        Contextualized Justifications for Mobile Augmented Reality Apps", In: <u>USENIX Symposium on
        Usable Privacy and Security (SOUPS)</u>.
        [CORE Conference Ranking: B, VHB-JOURQUAL3: -]

25.   Pape, S., Harborth, D., Kröger, J. (2021). "Privacy Concerns Go Hand in Hand with Lack of
        Knowledge: The Case of the German Corona-Warn-App", In: <u>36th IFIP TC-11 SEC 2021
        International Conference on Information Security and Privacy Protection (IFIP SEC)</u>.
        [CORE Conference Ranking: B, VHB-JOURQUAL3: -]

24.   Harborth, D., Pape, S., Rannenberg, K. (2020). "Explaining the Technology Use Behavior of
        Privacy-Enhancing Technologies: The Case of Tor and JonDonym". In: <u>Proceedings on Privacy
        Enhancing Technologies Symposium (PoPETs20)</u>, 2020(2), pp. 111-128.
        DOI: <u>https://doi.org/10.2478/popets-2020-0020</u>.
        [CORE Conference Ranking: B, VHB-JOURQUAL3: -]

23.   Tronnier, F., Hamm, P., Harborth, D. (2020). "The Role Of Behavioural Biases And Personality
        Traits Of Retail Investors In ICOs". In: <u>Twenty-Eight European Conference on Information
        Systems (ECIS)</u>.
        [CORE Conference Ranking: A, VHB-JOURQUAL3: B]

22.   Harborth, D. and Pape, S. (2019). "Investigating Privacy Concerns related to Mobile Augmented
        Reality Applications". In: <u>International Conference on Information Systems (ICIS)</u>.
        [CORE Conference Ranking: A*, VHB-JOURQUAL3: A]

21.   Harborth, D., Cai, X., Pape, S. (2019). "Why Do People Pay for Privacy-Enhancing
        Technologies? The Case of Tor and JonDonym", In: <u>34th IFIP TC-11 SEC 2019 International
        Conference on Information Security and Privacy Protection (IFIP SEC)</u>. Lisbon, Portugal,
        DOI: <u>https://doi.org/10.1007/978-3-030-22312-0_18</u>.
        (Nominated for best student paper award)
        [CORE Conference Ranking: B, VHB-JOURQUAL3: -]

20.   Hamm, P., Harborth, D., Pape, S. (2019). "Analysis of User Evaluations in Security Research", In:
        <u>1st International Workshop on Information Security Methodology and Replication Studies
        (IWSMR 2019), held in conjunction with the 14th International Conference on Availability,
        Reliability and Security (ARES)</u>. Canterbury, UK,
        [CORE Conference Ranking: -, VHB-JOURQUAL3: -]

19.   Harborth, D. (2019). "Unfolding Concerns about Augmented Reality Technologies: A Qualitative
        Analysis of User Perceptions", In: <u>Wirtschaftsinformatik (WI)</u>. Siegen, Germany.
        [CORE Conference Ranking: C, VHB-JOURQUAL3: C]

18. Harborth, D., M. Hatamian, W. B. Tesfay and K. Rannenberg. (2019). "A Two-Pillar Approach to Analyze the Privacy Policies and Resource Access Behaviors of Mobile Augmented Reality Applications", In: 52nd Hawaii International Conference on System Sciences (HICSS). Maui, US.
[CORE Conference Ranking: A, VHB-JOURQUAL3: C]

17. Harborth, D. and S. Pape. (2019). "How Privacy Concerns and Trust and Risk Beliefs Influence Users' Intentions to Use Privacy-Enhancing Technologies - The Case of Tor", In: 52nd Hawaii International Conference on System Sciences (HICSS). Maui, US.
[CORE Conference Ranking: A, VHB-JOURQUAL3: C]

16. Harborth, D. and Pape, S. (2018). "JonDonym Users' Information Privacy Concerns", In: 33rd IFIP TC-11 SEC 2018 International Conference on Information Security and Privacy Protection (IFIP SEC). Poznan, Poland, DOI: https://doi.org/10.1007/978-3-319-99828-2_13.
[CORE Conference Ranking: B, VHB-JOURQUAL3: -]

15. Harborth, D. and Pape, S. (2018). "Examining Technology Use Factors of Privacy-Enhancing Technologies: The Role of Perceived Anonymity and Trust", In: 24th Americas Conference on Information Systems (AMCIS). New Orleans, US.
[CORE Conference Ranking: A, VHB-JOURQUAL3: D]

14. Kohn, V. and Harborth, D. (2018). "Augmented Reality – A Game Changing Technology For Manufacturing Processes?", In: 26th European Conference on Information Systems (ECIS). Portsmouth, UK.
[CORE Conference Ranking: A, VHB-JOURQUAL3: B]

13. Harborth, D., Braun, M., Grosz, A., Pape, S., & Rannenberg, K. (2018). "Anreize und Hemmnisse für die Implementierung von Privacy-Enhancing Technologies im Unternehmenskontext", In: Langweg, H., Meier, M., Witt, B. C. & Reinhardt, D. (Hrsg.), Sicherheit 2018: Sicherheit, Schutz und Zuverlässigkeit, Beiträge der 9. Jahrestagung des Fachbereichs Sicherheit der Gesellschaft für Informatik e.V. (GI), pp. 29-41. Konstanz, Germany,
DOI: https://doi.org/10.18420/sicherheit2018_02
[CORE Conference Ranking: -, VHB-JOURQUAL3: -]

12. Harborth, D. and Pape, S. (2018). "Privacy Concerns and Behavior of Pokémon Go Players in Germany", In: Hansen M., Kosta E., Nai-Fovino I., Fischer-Hübner S. (eds) Privacy and Identity Management. The Smart Revolution. Privacy and Identity 2017. IFIP Advances in Information and Communication Technology, vol 526, pp. 314-329. Springer, Cham,
DOI: https://doi.org/10.1007/978-3-319-92925-5_21.
[CORE Conference Ranking: -, VHB-JOURQUAL3: -]

11. Harborth, D. and Pape, S. (2017). "Exploring the Hype: Investigating Technology Acceptance Factors of Pokémon Go", In: 2017 IEEE International Symposium on Mixed and Augmented Reality (ISMAR), pp. 155-168. Nantes, France, DOI: https://doi.org/10.1109/ISMAR.2017.32
[CORE Conference Ranking: A*, VHB-JOURQUAL3: -]

10. Harborth, D. (2017). "Augmented Reality in Information Systems Research: A Systematic Literature Review", In: 23rd Americas Conference on Information Systems (AMCIS). Boston, US.
[CORE Conference Ranking: A, VHB-JOURQUAL3: D]

ARTICLES IN PROGRESS (3)

9.   Harborth, D., Pape, S., McKenzie, L. (2021). "Why Individuals Do (Not) Use Contact Tracing Apps: An Empirical Analysis of the German Corona-Warn-App", Prepared to be submitted to: European Journal of Information Systems (EJIS).
[AJG 2021: 4, CORE Journal Ranking: -, ABDC Journal Ranking: A*,
JCR Impact Factor: 4.344]

8.   Harborth, D. and Pape, S. (2021). "A Privacy Calculus Model for Contact Tracing Apps: Analyzing the German Corona-Warn-App", Submitted to: ACM Transactions on Management Information Systems (TMIS).
[AJG 2021: -, CORE Journal Ranking: -, ABDC Journal Ranking: -,
JCR Impact Factor: -]

TECHNICAL REPORTS (5)

7. Harborth, D. and Frik, A. (2020). "Evaluating and Redefining the Permissions for Mobile Augmented Reality Apps", Working paper presented at the CLTC Symposium on Data Rights, Privacy, and Security in AI. Available at: https://dharborth.github.io/CLTC_Submission.pdf.

6. Harborth, D. and Pape, S. (2018). "German Translation of the Concerns for Information Privacy (CFIP) Construct", Available at SSRN, URL: https://ssrn.com/abstract=3112207.

5. Harborth, D. and Pape, S. (2018). "German Translation of the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) Questionnaire", Available at SSRN, URL: https://ssrn.com/abstract=3147708.

4. Harborth, D. and Bauer, E.K. (2017). "The Influence of Advertising on the Process of Technology Adoption: A Systematic Literature Review", Available at SSRN, URL: https://ssrn.com/abstract=3069809.

3. Harborth, D., Herrmann, D., Köpsell, S., Pape, S., Roth, C., Federrath, H., Kesdogan, D., Rannenberg, K. (2017). "Integrating Privacy-Enhancing Technologies Into the Internet Infrastructure", URL: https://arxiv.org/abs/1711.07220.

PUBLISHED DATASETS (2)

2. Harborth, D. and Pape, S. (2020). "Dataset on Actual Users of the Privacy-Enhancing Technology JonDonym", IEEE DataPort, DOI: https://doi.org/10.21227/a66b-8443.

1. Harborth, D. and Pape, S. (2020). "Dataset on Actual Users of the Privacy-Enhancing Technology Tor", IEEE DataPort, DOI: https://doi.org/10.21227/734p-nx67.