Department of Computer Science
University of California, Davis
300 Atrium Way, Apt 323, Davis, CA, USA
+1 (484) 743 8374
yvekaria@ucdavis.edu
https://www.yashvekaria.com
yash-vekaria
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Yash Vekaria

Research Interests

Bringing transparency and accountability to data practices across the evolving web.
Keywords: Security and Privacy at the Intersection of the Web and AI; Internet Measurement; Tech Policy

Education

2021– **University of California, Davis**
Ph.D. in Computer Science
Thesis: *Improving Online Privacy by Auditing Opaque Data Practices in Modern Digital Ecosystems*
My research makes the internet more transparent and accountable by developing black-box auditing techniques that reveal how online services collect, share, and use personal data across the web, smart devices, and AI systems, and translates these findings into regulatory enforcement and policy.

2016–2020 **LNM Institute of Information Technology**
B.Tech. in Computer Science

Experience

2021– **University of California, Davis**, *Research Assistant*
Advisor: Zubair Shafiq

2024– **HTTP Archive**, *Open Source Contributor*

2024 **Quantcast**, *Software Engineering Intern*

2022 **Max Planck Institute für Informatics**, *Visiting Research Fellow*
Advisor: Savvas Zannettou

2020–2021 **Innovaccer**, *Data Scientist*

Honors & Awards

2026 **Applied Research Competition Finalist**, *CSAW 2026*

2026 **Rising Star in CS**, *University of Iowa*

2025 **Distinguished Reviewer Award**, *USENIX Security Symposium 2025*

2024 **GGCS Ph.D. Fellowship**, *University of California, Davis*

2023 **Cybersecurity Summer Fellow**, *Georgia Tech*

Publications

Under review **Profiling the Profilers: Exposing Pitfalls in Data Broker Surveillance**
Yash Vekaria, Jennifer King, Serge Egelman, Alan Mislove, Zubair Shafiq

Under review **A Systematic Evaluation of Practical Privacy from Memory Architectures of LLM Platforms**
Yash Vekaria, Harsh Karia, Zubair Shafiq

Under review **SoK: Advances and Open Problems in Web Tracking**
Yash Vekaria*, Yohan Beugin*, Shaoor Munir, Gunes Acar, Nataliia Bielova, Steven Englehardt, Umar Iqbal, Alexandros Kapravelos, Pierre Laperdrix, Nick Nikiforakis, Jason Polakis, Franziska Roesner, Zubair Shafiq, Sebastian Zimmeck (**equal contribution*)

Under review **FP-Agent: Fingerprinting AI Browsing Agents**
Ethan Wang, Zubair Shafiq, **Yash Vekaria*** (**primary advisor*)

Under review **SST-Guard: Detecting & Characterizing Server-Side Google Analytics in the Wild**
Muhammad Jazlan, Alex Gamero-Garrido, Zubair Shafiq, **Yash Vekaria*** (**primary advisor*)
Led to several filter rules being added to EasyPrivacy, protecting millions of ad-blocker users.

Under review **GTM-Config: Reverse Engineering Google Tag Manager in the Wild**
Muhammad Jazlan, Eman Nabeel, **Yash Vekaria**, Zubair Shafiq

IMC 2027 **Tracking Conversations: Measuring Content and Identity Exposure on AI Chatbots**
One-shot revision Muhammad Jazlan, Ethan Wang, **Yash Vekaria**, Zubair Shafiq

S&P 2026 **Understanding Data Collection, Brokerage, & Spam in Lead Marketing Ecosystem**
Yash Vekaria, Nurullah Demir, Konrad Kollnig, Zubair Shafiq
*47th IEEE Symposium on Security and Privacy (**Oakland**), 2026*
Acceptance rate: 12.6% (135/1070)
Appeared at 3rd FTC Conference on Marketing and Public Policy, 2026
Appeared at 5th CNIL Privacy Research Day, 2026
Finalist at CSAW Applied Research Competition, 2026

CCS 2026 **Keys on Doormats: Exposed API Credentials on the Web**
Nurullah Demir, **Yash Vekaria**, Georgios Smaragdakis, Zakir Durumeric
33rd ACM Conference on Computer and Communications Security, 2026

IMC 2026 **PixelConfig: Longitudinal Measurement and Reverse-Engineering of Meta Pixel Configurations**
Abdullah Ghani, **Yash Vekaria***, Zubair Shafiq (**primary advisor role*)
26th ACM Internet Measurement Conference, 2026

EuroS&P 2026 **Towards Multi-Stakeholder Vulnerability Notifications in the Ad-Tech Supply Chain**
Yash Vekaria, Rishab Nithyanand, Zubair Shafiq
11th IEEE European Symposium on Security and Privacy, 2026

PETS 2026 **On the Suitability of LLM-Driven Agents for Dark Pattern Audits**
Chen Sun, **Yash Vekaria**, Rishab Nithyanand
26th Privacy Enhancing Technologies Symposium, 2026
Acceptance rate: 21.7% (130/706)

ICWSM 2026 **Turning Trust to Transactions: Tracking Affiliate Marketing and FTC Compliance in YouTube's Influencer Economy**
Chen Sun, **Yash Vekaria**, Zubair Shafiq, Rishab Nithyanand
20th International AAAI Conference on Web and Social Media, 2026
Acceptance rate: 20%

USENIX 2025 **Big Help or Big Brother? Auditing Tracking, Profiling, and Personalization in Generative AI Assistants**
Yash Vekaria, Aurelio Loris Canino, Jonathan Levitsky, Alex Ciechonski, Patricia Callejo, Anna Maria Mandalari, Zubair Shafiq
34th USENIX Security Symposium, 2025
Acceptance rate: 19% (456/2400)
Invited by DuckDuckGo to present findings company-wide to improve Duck.ai chatbot

SM+S 2025 **Auditing the Compliance and Enforcement of Twitter's Advertising Policy**
Yash Vekaria, Zubair Shafiq, Savvas Zannettou
Social Media + Society 2025 11 (1)

IMC 2024 **Watching TV with the Second-Party: A First Look at Automatic Content Recognition in Smart TVs**
Yash Vekaria*, Gianluca Anselmi*, Alex D'Souza, Patricia Callejo, Anna Maria Mandalari, Zubair Shafiq (**joint first authors*)
24th ACM Internet Measurement Conference, 2024
Acceptance rate: 21.3% (54/253)
Cited in five plaintiff petitions filed by the Texas AG against Samsung, LG, Sony, Hisense, and TCL
Cited in three private class-action lawsuits filed in California against Samsung, Hisense, and TCL
Cited by California Privacy Protection Agency (CPPA) in its legislative proposal to the board

S&P 2024 **The Inventory is Dark and Full of Misinformation: Understanding Ad Inventory Pooling in the Ad-Tech Supply Chain**
Yash Vekaria, Rishab Nithyanand, Zubair Shafiq
45th IEEE Symposium on Security & Privacy, 2024
Acceptance rate: 17.8% (261/1463)

Chapters

HTTP Archive 2025 **The 2025 Web Almanac: Generative AI**
Christian Liebel and **Yash Vekaria** and Jonathan Pagel and Thomas Steiner and Umar Iqbal and Maxim Salnikov and Barry Pollard

HTTP Archive 2024 **The 2024 Web Almanac: Privacy**
Yash Vekaria, Benjamin Standaert, Max Ostapenko, Abdul Haddi Amjad, Yana Dimova, Shaoor Munir, Chris Böttger, Umar Iqbal, Alberto Fernandez-de Retana, Barry Pollard

HTTP Archive 2024 **The 2024 Web Almanac: Third Parties**
Tobias Urban, **Yash Vekaria**, Zubair Shafiq, Chris Böttger, Barry Pollard

Teaching

ECS 152A **Computer Networks**, *Guest Lecturer*
Fall 2024, University of California, Davis

ECS 152A **Computer Networks**, *Guest Lecturer*
Spring 2022, University of California, Davis

ECS 152A **Computer Networks**, *Teaching Assistant*
Spring 2022, University of California, Davis

CSE 213L **Data Structures & Algorithms**, *Teaching Assistant*
Spring 2019, LNM Institute of Information Technology

CSE 216L **Computer Organization & Architecture**, *Teaching Assistant*
Fall 2018, LNM Institute of Information Technology

CSE 104L **Computer Programming**, *Teaching Assistant*
Fall 2017, LNM Institute of Information Technology

Mentoring

Doctoral

2025– **Ethan Wang**, *UC Davis*

2025– **Humaira Fasih Ahmed Hashmi**, *UC Davis*

2025– **Muhammad Jazlan**, *UC Davis*

2024–2026 **Chen Sun**, *University of Iowa*

2024–2025 **Aurelio Loris Canino**, *UNIRC*

Undergraduate

2026– **Kavish Kartha**, *UC Davis*

2025–2026 **Harsh Karia**, *UC Davis*, *Now: Software Engineer*, *Google*

2024–2025 **Abdullah Ghani**, *LUMS*, Now: *Masters*, *University of Cambridge*

2024–2025 **Jonathan Levitsky**, *UC Davis*, *Now: AI Research Engineer*, *Archer*

2023–2024 **Alexander D'Souza**, *UC Davis*, *Now: Machine Learning Engineer*, *Typeface*

Mentorship Programs

Spring 2023 **E-SEARCH**, *Mentor, UC Davis*
Engineering Student Experience in Mentorship, Exploration, and Collaborative Project Work

Spring 2023 **MANRRS**, *Mentor, UC Davis*
MANRRS: Minorities in Agriculture, Natural Resources, and Related Sciences

Service

2027 **Program Committee Member**
USENIX Security Symposium
ACM Internet Measurement Conference (IMC)
Privacy Enhancing Technologies Symposium (PETS)

2026 **Program Committee Member**
The Web Conference (WWW)
Privacy Enhancing Technologies Symposium (PETS)
Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb)

2026 **Organization Committee Member**
Web Chair, ACM Internet Measurement Conference (IMC)

2025 **Program Committee Member**
USENIX Security Symposium
Distinguished Reviewer Award

2025 **Invited Reviewer**
ACM Transactions on Web (TWeb)

2025 **Artifact Evaluation Committee Member**
Privacy Enhancing Technologies Symposium (PETS)

2025 **Organization Committee Member**
Web Almanac (HTTP Archive Project)

2024 **Program Committee Member**
ACM Conference on Computer and Communications Security (CCS)
ACM Workshop on Artificial Intelligence and Security (AISec)
Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb)
ACM Web Science Conference (WebSci)

2024 **Artifact Evaluation Committee Member**
Privacy Enhancing Technologies Symposium (PETS)
Network and Distributed System Security Symposium (NDSS)

2023 **Program Committee Member**
ACM Conference on Fairness, Accountability, and Transparency (FAccT)
ACM Workshop on Artificial Intelligence and Security (AISec)
ACM Web Science Conference (WebSci)
IEEE Conference on Sensing, Communication, and Networking (SECON)

2023 **Artifact Evaluation Committee Member**
IEEE Workshop on Offensive Technologies (WOOT)

Invited Talks

Dec 2026 **Building Trustworthy Conversational AI Systems in the Browser**
DuckDuckGo Company-wide Lecture Series, DuckDuckGo (Virtual)

Mar 2026 **Black-Box Audits of Personalization Ecosystems on the Web**
Rising Stars in CS Colloquium, University of Iowa
Center for Cybersecurity Seminar, NYU Abu Dhabi (Virtual)

Mar 2026 **Understanding Data Collection, Brokerage, and Spam in Lead Marketing**
Federal Trade Commission (FTC), Washington D.C.

Feb 2026 **Memory and Personalization in LLMs**
CITRIS Tech Policy Workshop, UC Berkeley

Sep 2025 **Understanding Opaque Data Practices and Risks in Online Marketing and User Personalization**
Stanford Security Lunch, Stanford University

Jul 2024 **Uncovering hidden security and privacy threats in online advertising**
University College London (UCL), United Kingdom

May 2023 **Be Aware: Dark Pooling Uncovered**
AdExchanger's Programmatic I/O, MGM Las Vegas

Jul 2021 **Differential Tracking Across Topical Webpages of Indian News Media**
CMLBDA, The LNM Institute of Information Technology, India

Selected Media Coverage

Sep 2026 **LG defends smart-TV features amid audio surveillance allegations**
Al Jazeera article by *Hoda Sherif*

May 2026 **Chatbot Ad IDs Share Data To Google, Microsoft, Other Analytics Providers**
MediaPost article by *Laurie Sullivan*

Mar 2026 **Security boffins scoured the web and found hundreds of valid API keys**
The Register article by *Thomas Claburn*

Mar 2026 **Security credentials inadvertently leaked on thousands of websites**
New Scientist article by *Chris Stokel-Walker*

Oct 2025 **AI Browsers are a Cybersecurity Time Bomb**
The Verge article by *Robert Hart*

June 2025 **Yes, your TV is probably spying on you. Your fridge, too. Here's what they know.**
NY Times article by *Rachel Cericola*, *Jon Chase* and *Lee Neikirk*

Mar 2025 **Roku, Amazon, and practically every company in the streaming business are inventing new ways to make money off your data.**
Vox article by *Adam Clark Estes*

Mar 2025 **You know that generative AI browser assistant extension is probably beaming everything to the cloud, right?**
The Register article by *Thomas Claburn*

Nov 2024 **You think you're watching smart TV ... In fact it's watching you**
The Times article by *Mark Sellman*

Sep 2024 **Smart TVs take snapshots of what you watch multiple times per second**
New Scientist article by *Jeremy Hsu*

Sep 2023 **Elon Musk's X is ignoring its own ad policies, a new study finds**
Fast Company article by *Chris Stokel-Walker*