

# Yash Vekaria

## Research Interests

Cybersecurity & Web Privacy; Web Tracking; Digital Advertising Ecosystem; Ad-fraud; Ad-targeting; Large-scale Internet Measurements; Online Misinformation; Applied Machine Learning.

## Education

- 2021–Present **Ph.D. in Computer Science** 3.97/4.00  
University of California, Davis
- 2016–20 **B.Tech. in Computer Science** 9.04/10.00  
The LNM Institute of Information Technology (LNMIIT), India.

## Publications

- IEEE S&P 2024 **The Inventory is Dark and Full of Misinformation: Understanding the Abuse of Ad Inventory Pooling in the Ad-Tech Supply Chain**  
Yash Vekaria, Rishab Nithyanand, Zubair Shafiq  
*IEEE Symposium on Security & Privacy (Oakland), 2024*  
Acceptance rate: 17.8% (261/1463)
- 2024 **Exploring Large-Scale Vulnerability Notifications to Improve Ad-Tech Supply Chain Security**  
Yash Vekaria, Rishab Nithyanand, Zubair Shafiq  
*Under Submission, 2024*
- 2024 **Auditing the Compliance and Enforcement of Twitter’s Advertising Policies**  
Yash Vekaria, Zubair Shafiq, Savvas Zannettou  
*Under Submission, 2024*
- WebSci 2021 **Differential Tracking Across Topical Webpages of Indian News Media**  
Yash Vekaria\*, Vibhor Agarwal\*, Pushkal Agarwal, Sangeeta Mahapatra, Sakthi Balan Muthiah, Nishanth Sastry, Nicolas Kourtellis (\*first co-authors)  
*13th ACM Web Science Conference, 2021*
- ICWSM 2021 **Under the Spotlight: Web Tracking in Indian Partisan News Websites**  
Vibhor Agarwal\*, Yash Vekaria\*, Pushkal Agarwal, Sangeeta Mahapatra, Sakthi Balan Muthiah, Nishanth Sastry, Nicolas Kourtellis (\*first co-authors)  
*15th International AAAI Conference on Web and Social Media (ICWSM), 2021*  
Acceptance rate: 22.4% (30/134)
- RCIS 2021 **A Metadata-based Event Detection Method using Temporal Herding Factor and Social Synchrony on Twitter Data**  
Nirmal Kumar Sivaraman, Vibhor Agarwal, Yash Vekaria, Sakthi Balan Muthiah  
*15th International Conference on Research Challenges in Information Science (RCIS), 2021*

## Ongoing Research Projects

- Studying Cross-device Tracking and Ad Targeting in Smart TVs and Smart Medical Devices
- Towards Detecting and Blocking Privacy Invasive Pixel Tracking
- Ad-Sprinter: Developing Effective and Performant Large-scale Ad Crawling Infrastructure

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## Experiences

- Sep 2021 – Present **University of California, Davis** **Davis, USA**  
*Research Assistant, Breakerspace Lab,*  
*Advisor: Prof. Zubair Shafiq*  
Research focus is towards investigating and improving security, privacy, and transparency issues in the online tracking and advertising ecosystem through internet measurements.
- Summer 2022 **Max Planck Institute für Informatik** **Saarbrücken, Germany**  
*Visiting Research Fellow, Internet Architecture Group (INET),*  
*Advisor: Prof. Savvas Zannettou*  
Research project aimed at detecting and studying the problematic advertising on Twitter to understand the compliance and violations of its advertising policies, problematic advertiser practices and effectiveness of Twitter's ad moderation strategies.
- Jan 2020 – Aug 2021 **Innovaccer** **Noida, India**  
*Data Scientist*
  - Built *ML* and *DL* models and performed *statistical data analysis* on healthcare data to improve cost and harm minimization for patients (like reduction of unnecessary imaging).
  - Worked on *healthcare data analytics*, dashboard building and data insights generation for 2 USA clientele ACO projects: *Orlando Health* (Florida) and *Dignity Health* (California).
  - Developed *automations* to streamline repetitive tasks like converting measure definition JSON files to SQL queries.
- Summer 2019 **Innovaccer** **Noida, India**  
*Decision Science Intern*
  - Improved Innovaccer's data model by *optimizing* PostgreSQL queries, thereby reducing the overall execution time from 10 hours to 3 hours.
  - Used *ML* to predict patient in-hospital revisits after discharge.

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## Honors & Awards

- 2024 **GGCS Ph.D. Fellowship** *University of California, Davis, USA*  
Fellowship worth \$10,000 awarded by Graduate Group in Computer Science.
- 2023 **Cybersecurity Summer Fellow** *Georgia Tech, USA*  
One of the 20 fellows selected from across the globe.
- 2016–2018 **Merit Scholarships** *The LNM Institute of Information Technology, India*  
Awarded to Top 5% students based on GPA.
- 2019, 2021 **Spot Awards** *Innovaccer, India*  
Two quarterly spot awards received: One for efficient optimization of data model from 10 hrs to 3 hrs. Second for minimizing patient costs.

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## Teaching

- Spring 2022 **Computer Networks (ECS 152A)** *Teaching Assistant*  
University of California, Davis, USA
- Spring 2019 **Data Structures & Algorithms** *Teaching Assistant*  
The LNM Institute of Information Technology, India
- Fall 2018 **Computer Organization & Architecture** *Teaching Assistant*  
The LNM Institute of Information Technology, India
- Fall 2017 **Computer Programming** *Teaching Assistant*  
The LNM Institute of Information Technology, India

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## Skills

General *Network Measurements, Computational Social Science, Data Science, Data Analytics, Data Visualization, Machine Learning, Deep Learning, Data & Text Processing, Natural Language Processing, Image Processing, Web Crawling*

Languages *Python, C, C++, Python Libraries (Pandas, Numpy, Matplotlib, Scipy, PyTorch, OpenCV, Selenium, BeautifulSoup), SQL/PostgreSQL, HTML, Javascript*

Tools *Docker, Git/GitHub, LaTeX*

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## Leadership

Spring 2023 **E-PRIME Mentor UC Davis**

Mentored undergraduate students on research project as part of the E-PRIME (Education Partnership in Research, Inclusion and Mentoring Experiences) Mentorship Program.

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## Services

AEC **Artifact Evaluation Committee Member**

Privacy Enhancing Technologies Symposium (PETS) (2024)

Network and Distributed System Security Symposium (NDSS) (2024)

IEEE Workshop on Offensive Technologies (WOOT) (2023)

PC **Program Committee Member**

ACM Conference on Computer and Communications Security (CCS) (2024)

Workshop on Measurements, Attacks, and Defenses for the Web (MADWeb) (2024)

ACM Workshop on Artificial Intelligence and Security (AISec) (2023)

ACM Conference on Fairness, Accountability, and Transparency (FAccT) (2023)

ACM Web Science Conference (WebSci) (2023, 2024)

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## Travel Grants

2023 *ACM IMC, ACM SIGMETRICS*

2022 *PETS, ACM WiSec*

2021 *IEEE S&P (Oakland) (Virtual), IEEE CSF (Virtual)*

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## Invited Talks

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

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## Media Coverage

Sep 2023 **Elon Musk's X is ignoring its own ad policies, a new study finds**

[Fast Company](#) article by *Chris Stokel-Walker*

Mar 2021 **Tracking the Trackers**

[Open \(The Magazine\)](#) article by *Ullekh NP*

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## References

**Prof. Zubair Shafiq**

Associate Professor, University of California, Davis

**Email:** [zshafiq@ucdavis.edu](mailto:zshafiq@ucdavis.edu)

**Webpage:** <https://web.cs.ucdavis.edu/~zubair/>

**Prof. Rishab Nithyanand**

Assistant Professor, University of Iowa, Iowa

**Email:** [rishab-nithyanand@uiowa.edu](mailto:rishab-nithyanand@uiowa.edu)

**Webpage:** <https://sparta.cs.uiowa.edu/people/rishab/>

**Prof. Savvas Zannettou**

Assistant Professor, TU Delft, Netherlands

**Email:** [s.zannettou@tudelft.nl](mailto:s.zannettou@tudelft.nl)

**Webpage:** <https://zsavvas.github.io>